

COIN INDUSTRY

PLAY METER

Volume 2 No. 8

August, 1976



Video Fix-It Primer

More Pinballs in Review

Operator Survey '76

"Because it's fun for us, it's profitable for you!"



Frank Ballouz, National Sales Manager. From Left: Roger Hector, Industrial Designer; Marty Rosenthal, Manager, Mechanical Engineering; Pete Takaichi, Manager, Industrial Design; Lenore Sayers, Manager, Sales Order Processing; Don Smith, Manager, Customer Service; Terry McFall, Draftsman.

"When a game like new LeMans passes the 'player test' here, we know it will pass the player test out there.

"Examples? Prototypes of Indy 4, Cops N' Robbers, Breakout, Flyball and just released LeMans are some of our recent games that turned on all kinds of Atari people at breaks, lunch hours, even after work. And, turned out to be winners in the field.

"What *really* matters to players is whether a video

game is *fun* to play. We know it and you know it.

"Because that's the only thing that guarantees repeat play and high earnings.

"When a new idea is developed, we play it. A lot. For engineering and production reasons ...and for *fun*! (Sometimes we have to remind people they're here to work!)

"And we don't stop with just ourselves. The games we like

are put in key test locations for further proving before you ever see them.

"If it's not fun, it doesn't get released. It's that simple.

"The point is, we like what we do. It's that spirit that produces successful products.

"That's why we have more games in every type of location. That's why you only see *originals*, not me-too rehashes. That's why we have more engineers competing to come up with more new games (about 25 right now) than ever before.

"And that's why you can count on profits when a new Atari piece is available.

"LeMans is our latest 'player' winner. It's an exciting new one-player driving game with 10 tracks (4 mystery) that *change automatically* after each successful run. Players also can earn extended play. (The prototype of LeMans has been on continuously for 3 months without a glitch — Terry McFall is current points champ),"

Get the specs on LeMans today. Also get in on the profits from the sensational new Flyball and

Cops N' Robbers. Your Atari distributor has the latest info, or contact us at Atari, Inc., 2175 Martin Ave., Santa Clara, Ca. 95050. (408) 984-1900.



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They called her "Little Sure Shot," and Annie Oakley gave the boys plenty to think about. She hit the mark so many times she turned herself into an entertainment legend, seems like overnight. Joyfully, along the way she managed to make a bundle for a passel of people, including Buffalo Bill... who knew a good thing when he saw one.

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COIN INDUSTRY **PLAY METER**



MEMBER

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Volume 2/No. 8
August, 1976

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PLAY METER, August 1976, Volume 2, Number 8. Publishing offices 4136 Washington Avenue, P.O. Box 24170, New Orleans, La. 70184. Telephone (504) 827-0320. Printing Offices, Franklin Printing Co., 209 Magazine St., New Orleans, La. Controlled circulation at New Orleans, La. Subscription rates: U.S. and Canada--\$20; Europe and Japan--\$35; Elsewhere--\$40. Multiple subscriptions (ordered at one time): 2-9, \$17 each; 10-24, \$15 each; 25 or more, \$10 each. Advertising rates on request. Copyright 1976 by Skybird Publishing Company. No part of this magazine may be reproduced without express permission. The trademarks, PLAY METER and COIN INDUSTRY PLAY METER, are registered. The editors are not responsible for unsolicited contributions. Postmaster: Send form 3579 to Play Meter, P.O. Box 24170, New Orleans, La. 70184.

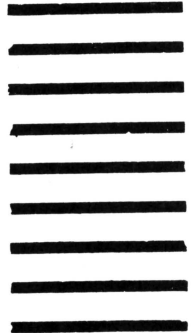
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Would you like to receive further, more detailed information on the products and/or product lines advertised in this month's Play Meter? We offer a service that makes it easy for you to do so. Here's how it works:

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from the editor

PLAY METER received a letter this month from an operator complaining about location owned equipment. In addition to our reply in this issue's Mailbox section, I would like to say something here regarding this, one of the more serious and less talked about problems facing the industry.

It should be noted here that when I talk about "location owned equipment," I am talking about a location whose main business is concerned with something other than recreation or amusement. I can understand an arcade or recreation center operator carrying his own equipment--amusement machine operators operate amusement machines--but bar owners and restaurant owners have no more business operating machines than an operator does mixing drinks or scrambling eggs.

Why do location owners want to own their own equipment? Because they think they can do a better job with it than their present operator, and because they're greedy and want all the money for themselves. What they eventually learn is that 100 per cent of nothing isn't anywhere near as good a deal as 50 per cent of \$100.

Where do locations buy their equipment? Where else but from desperate manufacturers about to go under, greedy distributors looking for a fast buck, unethical operators unloading surplus equipment or down and out location owners selling to their successors.

Location owners tend to neglect their equipment. Few, if any, know the meaning of "upgrading." Most don't know how to fix the equipment they own; they fail to maintain it in clean, working order and therefore create a lot of ill will from enraged customers. And that's bad for business, theirs AND ours.

A location owner like a bad operator makes business worse for everybody. People get turned off on coin-op equipment that is dirty and inoperable. They may begin to think that all coin-operated devices are the same way and they may not be quite so inclined to approach another machine at some future date. When that happens, not only has that machine lost a customer but the industry loses the customer as well.

As members of the same profession, operators owe it to themselves to recognize that they share the same customers. The player seldom notices the operator's decal on the equipment he is enjoying; rarely is he even aware of the brand of machine he is playing. All he knows is that that machine caught his attention, he wants to play it, and he expects it to work. If it doesn't, he'll get mad not at the operator, not at the manufacturer, but at the machine itself. And believe me, that's bad for business, EVERYBODY'S business.

It is bad enough that there are still a lot of operators who operate poorly. Location owned equipment can only make the situation that much worse. Usually a bad operator does himself in and eventually goes under, but a location owner, with the support of his main business can continue to grind out a living regardless of what his machines are bringing in. And the bad machines remain. Location owned equipment is like a cancer living within the industry, eating away at its foundation. We can only hope the disease is not terminal.

Ralph C. Lally II,
Publisher & Editor

Calendar

August 19-22

Michigan Tobacco & Candy Distributors & Vendors Ass'n. Boyne Mountain Lodge, Boyne Mountain, Michigan.

August 27-29

North Carolina Coin Operators Association, annual convention. Charlotte, North Carolina. Site not yet selected.

September 16-18

Music Operators of Virginia, annual convention. Hyatt House, Richmond, Virginia.

September 17-19

Florida Amusement Merchandising Association, annual convention. Deauville Hotel, Miami Beach, Fla.

October 2-3

Wisconsin Music Merchants Association, annual convention. Holiday Inn, Wausau, Wisc.

October 2-3

Coin Operated Industries of Nebraska, meeting. Ramada Inn, Omaha, Nebraska.

October 7-10

National Convention-Exhibit of Vending and Food Service Management, Civic Center, Philadelphia, Pa.

October 14-16

West Virginia Music & Vending Association, annual convention. Sheraton Inn, Clarksburg, West Va.

November 12-14

Music Operators of America, Expo 76. The Conrad Hilton Hotel, Chicago, Illinois.

November 18-21

IAAPA [Parks Show]. The Rivergate, New Orleans, La.

See ELTON JOHN starring in new
Capt. Fantastic
AND THE BROWN DIRT COWBOY
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ELTON JOHN STYLING

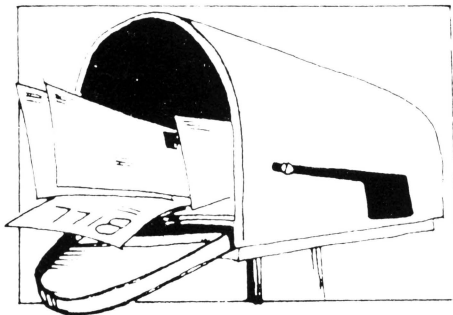
International fame of **ELTON JOHN**, rock super-star, and brilliant Elton John styling with **sparkling mirror lines** on backglass gets immediate attention on location, fast, fascinating action holds play for long runs and super-star collections.

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See Distributor or write *Bally* 2640 Belmont Avenue, Chicago, Illinois

mailbox



Having been an outsider to the coin industry for most of my life, I always regarded arcades and coin machines as a big rip-off. Man, how my opinion has changed!

My father recently became the regional manager of a growing arcade chain, and as time goes by, I can see how this industry has had a bad case of public relations. In the two years that I've been associated with the coin business, it has really bugged me that people think we are in the business to rip them off. I agree with Bob Nims in his interview in the June issue of *Play Meter* that "There has been a lack of communication with the general public." I believe it is time for a change. I'm not saying we should tell the public the amount of our profits, but I do believe that it is time we show the community

Exidy•Chicago Coin

that we also have community spirit and are not out to cheat them.

I would like to commend *Play Meter* for being the leader in this field. Keep up the good work!

Timothy W. Hoyle
Pensacola, Florida

Bravo Marshall Caras! Wise judgment should win out. Item #2:"RSVP." Let some of our space age engineers manufacture a low-priced amusement machine. What happened to counter games?

Robert Lyons
Lyons Music and Vending Co.
Skowhegan, Maine

Is there a commercially made tool for cleaning out the holes on an air hockey table?

Jim Negley
Amtron
Plattsburgh, N.Y.

[Miles Untiedt, Design Engineer for Brunswick suggests straightening out the smallest paper clip you can find. Alternatively, he says, you can use a No. 62 drill bit. It doesn't sound scientific, but it seems to work.--Ed.]

We have a problem in Spokane: one of the area operators is selling phonographs and foosball

•Pleasure Games•

tables to locations in order to secure their vending and electronic game equipment accounts.

We are not in business to sell equipment, but, as a consequence of this operator's actions, other location owners have begun to expect us to match his offer. Our real gripe is that the equipment is being supplied to this operator by a distributor outside the Northwest area.

Our question is this: What protection does an operator have against distributors who continually interfere with business competition completely outside their own regions?

Rich Koch
Keith's Music
Spokane, Wash.

[We wouldn't be too quick to blame the bootlegging distributor. Some distributors do sell outside of their assigned territories and there's not much anyone can do about that since distributors--according to some interpretations of the federal anti-trust laws--are not legally bound to selling to a restricted area.

"Bootleggers" deal over the telephone and through the mail and therefore they hardly ever get to see their buyers face-to-face. We doubt seriously that there is a conspiracy going on. The distributor probably has no idea that the so-called "operator" is re-selling the equipment to location owners. So it wouldn't be a bad idea for you to let Mr. Distributor in on what's going on. Distributors rightly shudder at the name "location seller." The distinction is bad news for future sales; if there is anything an operator won't tolerate, it's a "location seller." The distributor in this case, when he learns the facts, may well want to re-evaluate some of his "out-of-town" customers.

It is the "operator" who seems to be the real problem here. We think you ought to sit him down and find out what he likes so much about financial suicide. Our suggestion would be to try to talk some sense into him and, failing that, just to wait him out. He should go bust before too long. But by no means be so stupid as to match his outrageous offers. --Ed.]

PLAY METER
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PARTS AND SERVICE

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Have you ever wondered how video games *really* work? After all, how *do* they get those images on the TV screen and move them around so realistically?

The *Textbook Of Video Game Logic* not only describes how the video game computer itself works, but also the operation of all basic digital logic devices. The book is primarily oriented to video game designers and technicians, but anybody interested either in video games or in digital logic applications will find a great deal of valuable material.

The first chapter deals with the operation of common small scale digital integrated circuits (the basic gates) and medium scale devices (flip-flops, counters, shift registers, multiplexers, etc.). The logic symbol, schematic and truth table for each device is carefully explained in simple, basic terminology that requires no previous digital or computer experience to fully understand the material presented.

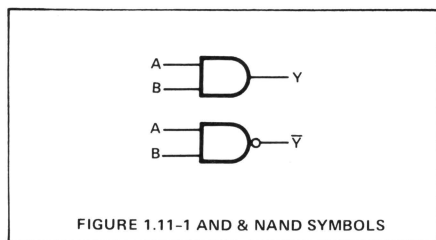


FIGURE 1.11-1 AND & NAND SYMBOLS

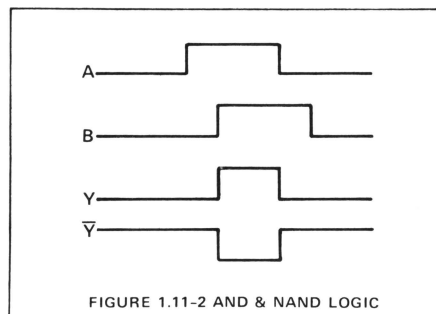


FIGURE 1.11-2 AND & NAND LOGIC

Considerable time is spent showing exactly how more complex devices such as counters are built from the simpler digital building blocks (gates).

Chapter 2 deals with the theory and operation of TV monitors. This is a basic explanation of how the circuitry of the TV monitor generates the pattern of lines (the *raster*) on which are displayed the various images. There is even a nice little section describing how to turn any regular TV into a TV monitor capable of taking direct video input.

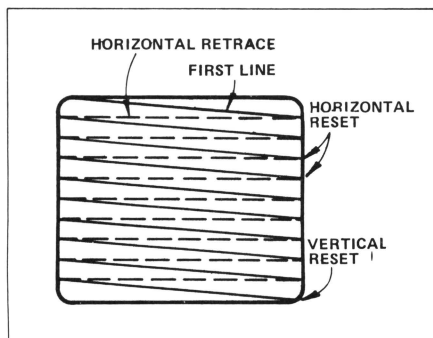
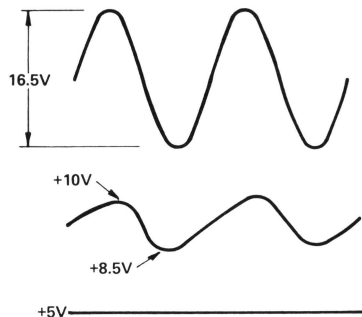


FIGURE 2.7-1 NON-INTERLACED RASTER SCAN This type of scan is used in almost all video games since it is a bit easier to implement than the interlaced 525-line variety used in TV broadcasting. Although only 262 lines are scanned, the resolution is generally adequate for the amount of information needing to be displayed for a video game.

Once the reader has gained a basic understanding of digital circuitry and TV monitor operation, the following chapters on video game computer circuitry are easy to understand. The next chapter deals with general video game architecture, meaning the different techniques by which a game can be created.

Chapter 4 is a thorough discussion of video game power supplies (and power supplies in general). Using actual oscilloscope photographs, this section graphically illustrates how raw AC power is processed into a completely regulated DC source.



After dealing with all this basic information, the book gets a lot more interesting. For you TV terminal freaks, chapter 5 will be quite fascinating since it goes into an in-depth explanation of synchronization and timing circuitry. It describes in detail the differences between interlaced and non-interlaced raster scans and precisely how the image is synchronized with the electron beam so it is displayed in the right place.

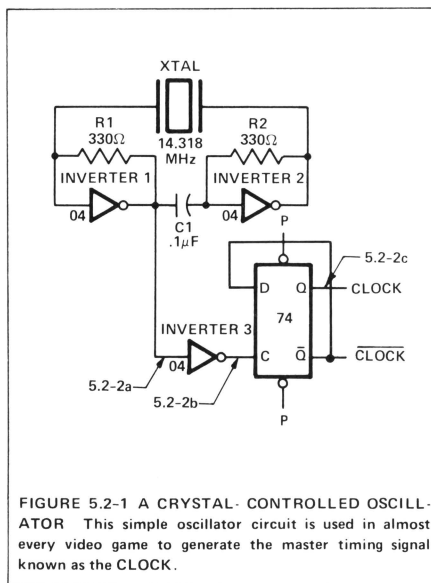
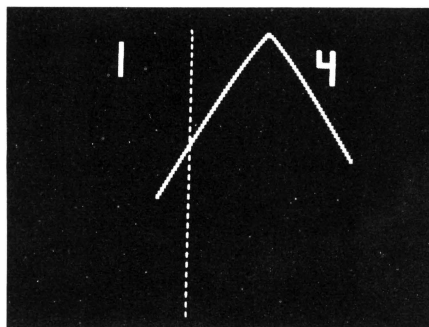


FIGURE 5.2-1 A CRYSTAL-CONTROLLED OSCILLATOR This simple oscillator circuit is used in almost every video game to generate the master timing signal known as the CLOCK.

Successive chapters are concerned with how images are generated and moved. Chapter 6 is exclusively devoted to the subject of motion and uses examples from various games to show how the game designer controls the direction and velocity of a moving image.



Probably the most interesting section however is the chapter on creating images (chapter 7). Images can be created by either of two techniques: *generated* images and *stored* images. The generated images are produced by individual circuits composed of small random logic elements, however stored images are held in a special type of semiconductor memory known as a ROM or Read Only Memory. The ROM allows a game designer to enter an image directly into the device. This chapter explains not only how this is done, but also how the image is then read out of the ROM and displayed on the TV screen.

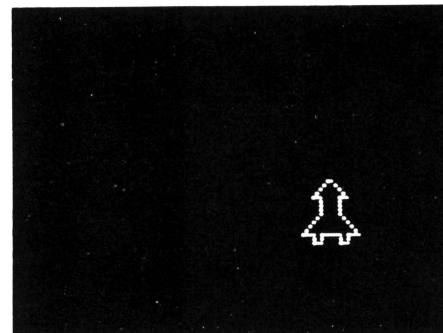


FIGURE 7.7-1 A DIODE MATRIX IMAGE Any simple image such as the one above can be stored in a diode matrix — the earliest form of read-only memory. The memory is scanned and the data read out by two sets of counters. The vertical counter selects each line of the image while the horizontal one scans each point along the line.

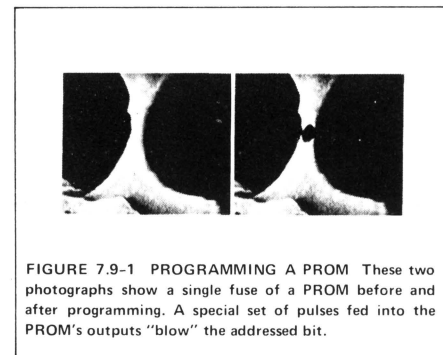
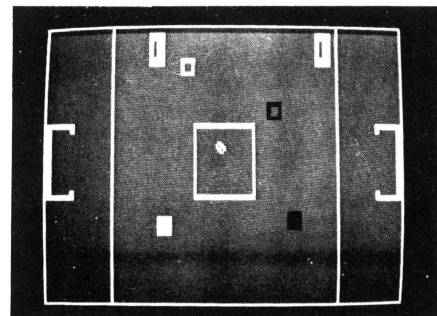


FIGURE 7.9-1 PROGRAMMING A PROM These two photographs show a single fuse of a PROM before and after programming. A special set of pulses fed into the PROM's outputs "blow" the addressed bit.

The final two chapters describe score and paddle circuitry. Every video game must have some sort of score circuit and this section shows how numbers are placed on the TV screen and changed as the player gains more points. The paddle section illustrates how paddle images are created by a special circuit and controlled by turning a potentiometer on the game cabinet.



coinman of the month

U.K. Salesman High on Video

Play Meter Talks with Cherry Group's Vic Leslie



"I thought it was the most fabulous game I had ever played. I couldn't tear myself away from it. I felt it was going to revolutionize the industry."

Vic Leslie got his start in the industry driving a cab. One day he picked up U.S. exporter/importer Myron Sugarman at "the premises of what was then called Phonographics." They talked--"he was looking to set up agents in other places to take some of the travelling off his shoulders"--and the next day Vic was working for what was to become Myron Sugarman/UK, a new company.

He started out "starry-eyed" as one of those agents, but soon "it became clear that we could do considerably better if we actually had our own company holding stock in England. So we formed a company and I actually started importing equipment into England myself."

He wasn't operating then, only selling, primarily used pinballs and used jukeboxes. Operating didn't start until 1972 when he bought Sugarman out of the English business and continued on his own.

"I became independent and went looking for my own equipment to sell. I carried on much the same, buying from several companies in the U.S.A., all of whom were very good to me."

Then came video. Vic was wary of the new games at first, but was soon an enthusiastic supporter of video. Now he works as UK sales manager for the Cherry Group, the huge operating and distributing firm that deals exclusively in video games. Vic started negotiating with the Cherry Group in June of last year, visited their facilities in Sweden in October and sold his business to them effective January 1 of this year.

The English branch, besides serving as exclusive distributors for Atari in the United Kingdom,

operates equipment in over 200 sites in England. And the goal is to increase that to 600 sites. Vic is married. He and his wife Esmay live in the London area. Although, according to Vic, "Sales is my thing," we talked to him mostly about operating, particularly about operating video games, now and in those early hectic days.

PLAY METER: How did you get started with video games?

LESLIE: In my travels I had run into a guy called Rui Lopes. I met him at the MOA in 1972, I believe it was. I was pretty bowled over by a machine there called Nutting Computer Space. I thought it was the most fabulous game I had ever played; I couldn't tear myself away from it. I felt at that time it was going to revolutionize the industry. However, I didn't feel it prudent at that time to purchase because of the technology involved in the game: it was way beyond anything we could handle in England. Even people here in America who were better judges than I were pessimistic about it. But that's how I came to know Rui. I introduced myself to him at the Nutting Associates stand. We talked at length about his game, but that's as far as that ever went.

At the ATE in 1973, the London Exhibition, Rui and I bumped into each other again. Actually he approached me and said that he had a different type of game: would I be interested in marketing it in England? I wasn't, because I was really tied up with just the used equipment. I recommended him to somebody else in England. I believe he shipped in

the machine, which was called the Nutting Computer Space Ball, but was Rui's version of Pong. Pong had just been invented a month or two prior to that and hadn't come to England at all at that time.

Rui shipped the machine and that was the last I thought about it for a month or two. Then Rui got in touch with me again. He said the guy had bought the machine but all he did was copy it and build more for himself in England and "I'm still no better off now than I was." By this time London Coin had started importing Allied Leisure's Paddle Battle, and it was beginning to take off.

I think we all know the story of how Paddle Battle or Pong just swept across America and then the rest of the world. It became fabulously successful. London Coin was importing the games by air, and selling them as fast as the planes could ferry them in. They were charging absolutely the top dollar for them.

PLAY METER: What was that?

LESLIE: In those days, I think it was 525 pounds, which would be equivalent to about \$1300 to \$1500. They were selling like hot cakes. Everybody was going crazy, as undoubtedly they were in America, and everywhere else for that matter.

Rui Lopes re-entered the picture. He called up and said, "Look. This guy that you recommended to me for a machine, as a sample--all he did was manufacture it; he's certainly not taking any more."

Rui shipped me a sample. And although it did not have the presentation of the Allied game to it, it did the same thing and was considerably cheaper. So, I got myself on a plane to California to look. Rui met me at the airport and showed me the games. We



"It's still a very hard sell. The arcades have accepted the video games to a great extent. But many of the operators are still very anti-video."

started buying and we also flew them in. We were flying them in 50 to 100 at a time. And in those days you could get a pretty good deal on the airlines. In fact, because we were doing it in bulk, it came out to be less than \$100 a machine to air freight from California.

PLAY METER: At one time couldn't just about anybody go out and buy a video, or the chips and boards and build a market almost?

LESLIE: At one time perhaps. But so many people did that that there was suddenly a tremendous shortage of chips and people set up business supplying chips and supplying designs for boards, supplying boards, supplying kits, supplying everything, you name it. Anybody that could adjust the contrast on a television set thought they could build a video game, and many did. Dozens came out in England and I'm sure America.

Nutting did not follow up Computer Space Ball with any revolutionary ideas. On a later trip to Miami I visited Allied, and I saw a game called Ricochet, which was a four-player game. That was the next innovation.

PLAY METER: These two-player tennis games though, did they glut the market in England as they did here?

LESLIE: Absolutely.

PLAY METER: How long did they stay on location?

LESLIE: I suppose we were looking at four to five months and in these first four or five months, when people were earning a lot of money, no one was getting hurt. Everybody was satisfied. But some more astute people were beginning to see that the takings were dropping off. And the initial flood eased a bit.

What also happened at that time was that when I started to import the Space Balls, I also started my own operation, solely a video game operation. Between myself and my sales manager we started to build our operation. In fact he got me my first site, a pub on the King's Road in Chelsea. And it didn't take very long before a lot of locations were getting in touch with us.

PLAY METER: What was behind this decision to operate exclusively video games?

LESLIE: It was very simple. I didn't have any mechanical knowledge of other games. Although I had sold flippers and jukeboxes, I didn't have any service department.

PLAY METER: That doesn't make sense. Why then were you venturing into solid-state, digital electronics?

LESLIE: It was simple. It really was. There were only three major components: one was the television set which supposedly any local television guy could fix if it went wrong. The PCB was easily interchangeable and the coin acceptor mechanism was the same as with most other games.

So, it really didn't create any problem for us at all. We moved into servicing the games very easily. Another reason for starting the operation was because video, at that state, was doing tremendously well. It was a bonanza. The machine would pay for itself in no time.

PLAY METER: What about your locations: how did you find them? Were there other operators in

these locations or were they virgin territory?

LESLIE: In general, they were pubs and in general there was already an operator there operating a jukebox or a slot.

PLAY METER: How could you determine whether the location would be suitable or not for video games in that early stage?

LESLIE: Every location was a suitable video game location.

PLAY METER: Is it still that way today?

LESLIE: No, you have to be a little more discerning. But, in general most pubs are still good video game locations. And that's where the majority of our operation lies. In fact, the majority of operating *in toto* in England is concerned with pubs. The brewers own in excess of 70,000 public houses in England. That's a lot of pubs and a lot of good sites.

PLAY METER: Do you encounter problems in such a situation where you operate equipment with another operator? Is there any sort of fiction?

LESLIE: Well, you don't operate the same equipment. We would never operate our video game alongside somebody else's video game. Breweries tend to award contracts for certain types of operations. One guy will operate the slots and sometimes the music as well, but it's quite often that one man will operate the slot in a pub, one will operate the juke box, another will operate the pool table, if there is one, and still a fourth man will operate the video game.

And the breweries are aware enough of the earning powers these days of each individual

machine to know who they want to operate with. They want to operate with the operator who will give them the best possible return. So at that stage, everybody was going into operating video, but it was totally virgin territory. There were 70,000 pubs plus every other site you can think of to be filled, and, of course, there were never that many machines. So there was no problem.

PLAY METER: But why do you operate video games exclusively? Why not any other types of games?

LESLIE: In my original state as Vic Leslie, I operated video games exclusively because I thought those were the games I could handle and I thought they were the games for the future, as well as the games that would earn me good money. And I had very little competition. In our current state as the Cherry Group, we operate video games exclusively in England because we think they have the most potential and the best earning power. We also still have a situation in England where there is very little opposition. So, it's our best move. There is a great deal of competition in pins, slots, in music and pool. They're all spoken for to a considerable extent, and it is very difficult to get a fresh start in them.

PLAY METER: Why is the competition generally in England, as far as video games are concerned, so minimal?

LESLIE: I believe because of our poor economic state, the people that got hurt with the original videos got hurt to such a far worse extent than operators in America and it made them very weary of video games. The English operators invested what to an Englishman was a considerable amount of money in purchasing equipment which didn't operate profitably after about four or five months. I'm sure this is exactly the situation you had here in America.

The people that had the tennis games went out and bought 25 to 50 exactly the same, so you had tennis games in every location. Even when football came out as opposed to tennis, the same thing continued to happen. They hadn't yet learned their lesson. So, the real damage was done with the tennis games and the football games. Because there were no new games to rotate in, the public lost interest fairly quickly.

PLAY METER: What is the location life of a game today?

LESLIE: We are very sophisticated today in our handling of the games, but generally we never let a machine remain on a site longer than three to four months.

PLAY METER: So, how do you keep tabs on what these things are, and when it's time to change. It's pretty well established that video games don't last any longer than what they did three years ago.

LESLIE: But now we're up to date. I never did keep that close a check as Vic Leslie, as my own company, but now I am proud to be associated with probably the largest video operators in the world. We have brought the operation of video games to a very sophisticated level. We run a graph on every single game and we monitor very closely the

(continued on page 29)



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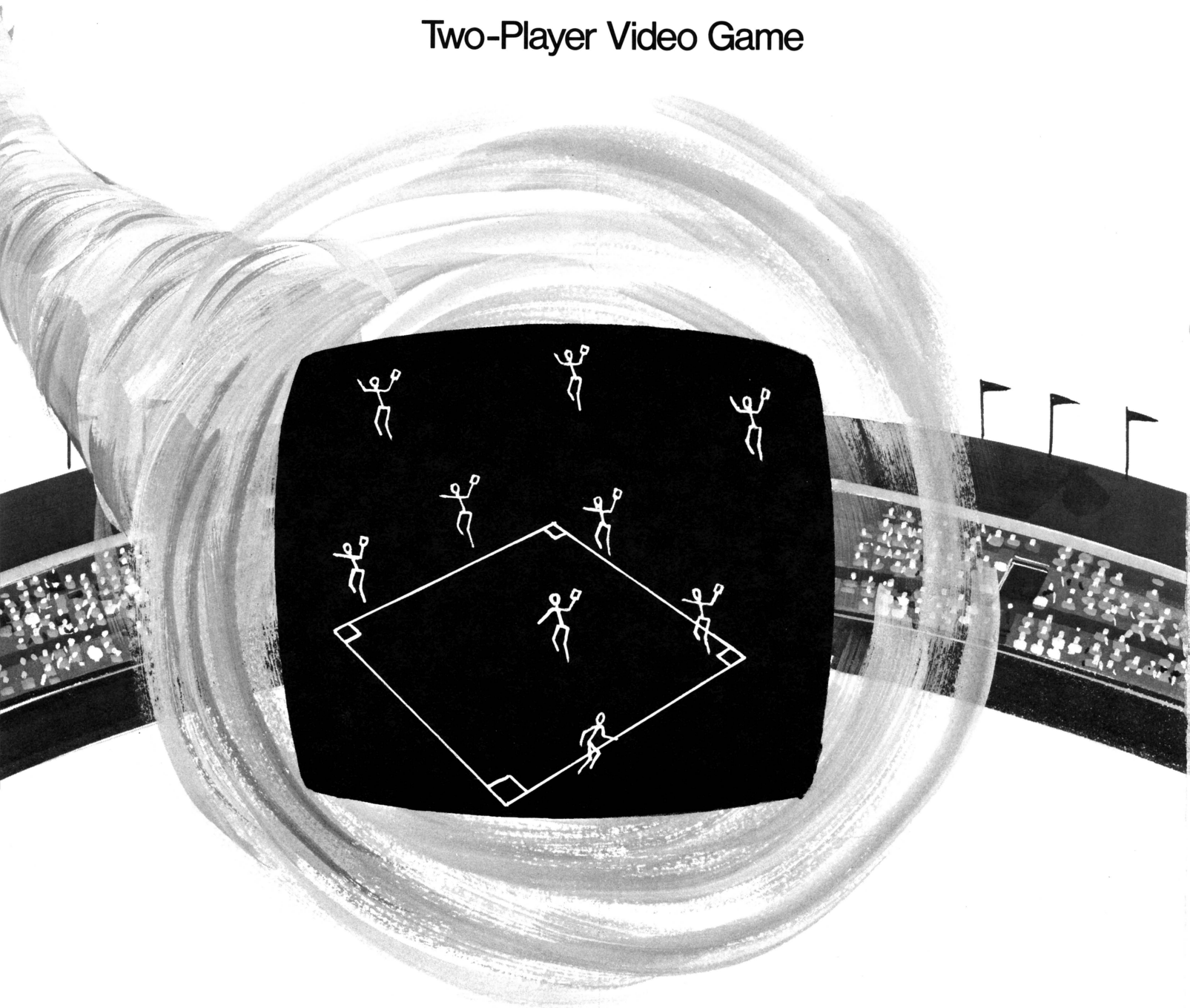
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operating

Mich. 8-ball Held

The first annual Music Operators of Michigan State 8-Ball Tournament, held June 19 in Lansing, drew nearly 100 competitors from all parts of Michigan.

Five thousand dollars in prize money was awarded with first prize of \$1,000 going to Lenny Hicks of Standish. Hicks represented the Tiger's Den in Pinconning, a location sponsored by American Amusement of Bay City.

Frank King of Petoskey, representing Leo's Lounge which was sponsored by L & S Music, took the \$500 second prize and third and fourth place went to Nick Kowalczyk of Hamtramck and Mark Plachta of Grand Rapids respectively.

An audience of over 300 people attended the event which was the first coin-op pool tournament ever held on a state-wide basis in Michigan. Over twenty members of MOM participated in the contest by sanctioning their locations.

Neglected Switch

by B.M. Powers

The most misunderstood and neglected switch in a flipper game today is the flipper "end of stroke switch." This switch performs a vital function to the proper operation of a game. However, it does not stand-up and say, "This feature is not working properly," when it is not functioning.

Let us examine logically the function of this switch so that we may understand the effects of it not functioning properly.

The basic circuit drawing for a Bally flipper shows a normally open switch (the flipper button), a double wound coil (flipper solenoid AF 25-500, AF 28-1000), and a normally closed switch (E.O.S.).

The normally open switch is the button on the side of the cabinet which, when pushed, closes the switch to connect the current to the solenoid. It completes the circuit to the pull-in winding of the coil, a heavier gauge strong winding magnet wire, to insure a fast pull-in or actuation of the flipper. During this

pull-in, or actuation, the circuit is completed through the flipper button switch, the pull-in winding of the coil, and the closed end-of-stroke switch.

The pull-in winding in this particular drawing is the AF 25-500. Upon actuation or pull-in of the plunger, the linkage arm opens the normally closed 'end-of-stroke' switch. This causes the circuit to go through both windings of the solenoid, AF 25-500 and AF 28-1000 in this drawing.

The hold-in winding is a weaker winding, using lighter gauge wire. The purpose is to disperse heat and prevent a solenoid burnout when the flipper button switch is held in or in the closed position.

Two major problems with a flipper can be understood with the understanding of this circuit.

The first is solenoid burn out. A coil will burn out if this switch is never *opening* upon actuation of the flipper. What is happening is the normal bat action of the flipper is taking place; yet the only windings on the coil that are being used is the strong, heavy gauge wire. A

solenoid will burn out when the flipper button is held in.

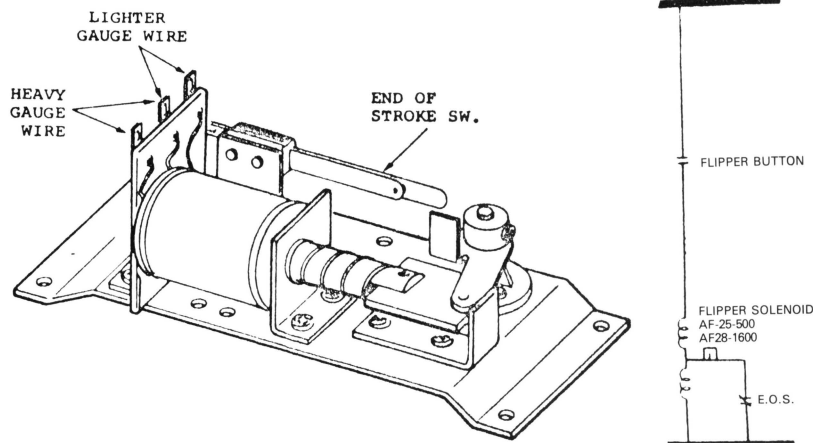
The second is a weak flipper action. A weak flipper could be caused by the fact that this switch is never in the *closed* position. This could either be due to the adjustment or amount of dirt on the contact's surface, not allowing a circuit to be made.

What is taking place here is the circuit is initially going through both windings of the solenoid, causing a slower pull-in of the plunger.

The adjustment on this switch should be made with the plunger completely depressed manually. The gap between contacts should be $3/32''$ and when the plunger is let out, the longer blade should follow thru the shorter blade $1/32''$ to insure a good wiping action of the contacts.

Remember, when adjusting this or any other switch, adjust the static blade not the actuating blade. The static blade on this assembly is the shorter blade; the actuating blade is the longer.

The only lubrication on this unit is the linkage.



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Vulcan New Jersey Tournament Success

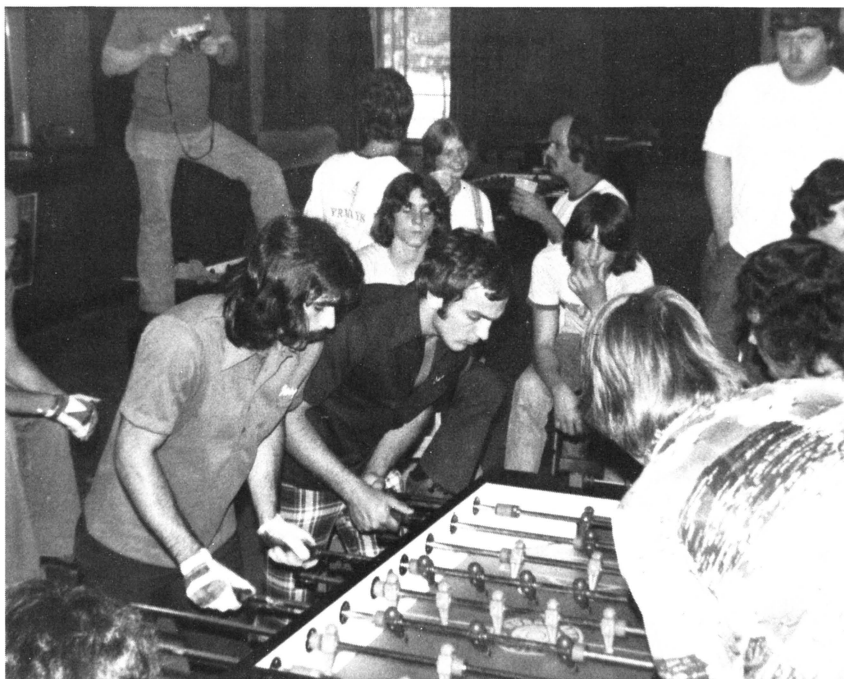
The second Vulcan Fussball Tournament held recently at the Holiday Inn, West Long Branch, N.J., was a huge success, according to Tournament Director Joe Bradford of Ebsco Amusements. Sixteen teams faced off for \$500 in cash and prizes at the double elimination event. All participants were from New Jersey.

First place winners were Dominic Sciarappa and Domenico Penta, both of Long Branch. They lost their first round match but progressed through the loser's bracket to face Steve Harvey of Belmer and Ken Batterson of Parlin who had reached the finals through the winner's bracket. Harvey and Bat-

erson finished second and the team of Les Nedrick of Fair Haven and Ernie Keise of Eatontown was third.

The event attracted a large number of spectators, according to Bradford, and received extensive newspaper and radio coverage. In addition, for the first time, fussball

was featured on the four VHF channels operated by New Jersey Public Television. Bradford predicted that interest in the table sport will increase in the New York, New Jersey and Pennsylvania areas as more of these tournaments are held in the future.



Larry Burchfield and Dennis Wallace combine to defeat Chuck Sallin and Phil Simmons on their way to winning the Syracuse open doubles.

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Hurricane - Syracuse Draws Large Field

The third Irving Kaye Hurricane tournament to be held this year at the New York State Fairground, Syracuse took place on June 11 to 13. The tournament was co-sponsored by Robert Jones International.

In all \$1,212.00 was awarded in prize money. Combined with \$1,835.00 from the two previous Syracuse tournaments, this makes \$3,047.00 awarded in the Syracuse area already this year with good prospects for another tournament in Syracuse before the end of the year, according to Jim Tyrell, tournament director.

Three categories of play--open doubles, women's doubles and singles--drew 70, 8 and 59 entries respectively. The champions in each category received championship Hurricane T-shirts and the top three teams in each category received trophies.

Receiving the Robert Jones Dis-

tributor's trophy given to the outstanding player of the tournament was Larry Burchfield of Athens, Ohio. Burchfield was a double champion, winning the singles and combining with Dennis Wallace to win the doubles as well.

Outstanding woman player was Pat Laurin of Syracuse, who won in the women's doubles for a second time and who placed 17th in the singles against some good male competition.

The tournament was covered on WNYS-TV's Sunday night sports report.

Winners in a Hurricane tournament held in Oswego, N.Y. on June 20 were Bob and Gary Wicks of Syracuse in the open doubles and Dennis Wallace of Fulton, Ohio in the singles. The tournament, co-sponsored by Putman O'Brien, awarded \$560.00 in prize money.

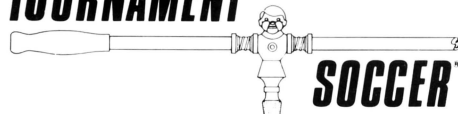
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Play Meter's mythical Mr. Average operator 1976 operates 263 machines in 87 locations. His commission structure is a 50/50 split with in most cases an additional 10 percent per week in front money or a guaranteed weekly minimum of \$20-25. His pricing structure is as follows:

Popular Prices

Phonograph	2 plays for 25 cents, 5 for 50 cents and 10 for a dollar.
Pinball	2 (5-ball) plays for 25 cents
Videos, Arcade games, Pool, Soccer tables, Shuffles	25 cents per game

Specifically Mr. Op's equipment consists of 76 pinballs (29 per cent of the total), 58 phonographs (22 per cent), 56 arcade games (21 per cent), 42 pool tables (16 per cent), 18 soccer tables (7 per cent), 10 shuffles (4 per cent) and 3 others (1 per cent). The oldest piece of equipment on his route is an eight year old phonograph. His oldest pinball is six years old as is his oldest pool table and his oldest arcade. His oldest video game and his oldest soccer table are both three years old. As far as new equipment is concerned, during the past year he has purchased more pinballs than pool tables, more pool tables than phonos, more phonos than arcade games and more arcade games than table soccers.

As far as the individual equipment is concerned, he finds his pinballs consistently the best earners, but our statistics show that he grosses

the most on his phonograph. The breakdown is as follows:

Weekly Gross

Phonograph	\$49 per week
Pool table	\$41 per week
Video game	\$40 per week
Soccer table	\$39 per week
Pinball	\$35 per week
Shuffle alley	\$30 per week
Arcade game	\$26 per week
Ball bowler	\$25 per week
Shuffleboard	\$23 per week

If Mr. Op 1976 is operating his favorite equipment, he has a Rock-Ola phonograph, either a Bally or Williams pin, a Valley pool table, an Atari video game, a Dynamo soccer table, an arcade game by Midway, a United shuffle alley and an American shuffleboard. Each week he changes three records on a mythical phonograph containing 34 per cent rock, 25 per cent country and western, 24 per cent soul, 9 per cent easy listening and 8 per cent other. He is rotating his games every four to five months.

The largest percentage of operators responding to the *Play Meter* poll found pool their most popular game in tavern locations and pinball their most popular game in non-tavern locations.

Pinball, video and pool are *all* becoming more popular according to our operators. Driving games, soccer tables and arcade games hold steady in popularity, but target games, bumper pool, air cushion

[Ed. note: The following is a presentation of the results of *Play Meter's* Annual Operators Poll, which appeared in the April issue. Because the number of responses fell short of what we would consider a representative level, it should be said that the results do not necessarily reflect the exact situation of the operator in today's industry. The results following are, however, an accurate account of the responses we did receive. We present them for the interest of our readers, especially those who did participate in the poll. Any references made to commercial products do not represent the views or opinions of the staff and management of *Play Meter* magazine.]

games, ball bowlers and shuffles are presently declining in popularity.

Solid-state machines seem to be gaining popularity among operators. The operators we polled were split right down the middle in their preference between electro-mechanical games and solid-state games. Half preferred one and half the other from both earnings and service standpoints.

Either way, though, the games are overpriced. As might be expected, the operators responding unanimously agreed to that. And they do seem to be buying less equipment. One quarter said they bought more phonographs this year than last, but one quarter bought fewer as well. One half bought about the same number of phonos as they did last year. As far as amusement games were concerned, the buying breakdown was as follows:

Games Purchases

Bought MORE	25 per cent
Bought about the SAME	33 per cent
Bought FEWER	42 per cent

This curtailment in buying is despite there being more locations available this year than last (according to 75 per cent of our sample), despite the newer games, those manufactured over the past two years, having a general superiority in earning potential over their predecessors (according to an overwhelming majority), and despite the fact that our average operator added eleven locations to his route during the past year while losing only three.

(continued on page 44)

Home Video

Consumer Electronics Show Report

by Laura Kreter

Home video game units provided the biggest new attraction at this year's Consumer Electronics Show, held at McCormick Place in Chicago, June 13 through 16.

Over thirty-five manufacturers including Allied Leisure Industries, Inc., Atari, Inc., APF Electronics, Inc., Magnavox Co., and Universal Research Laboratories, Inc., displayed home TV game units. Consumer projection televisions, CB radios, calculators, hi-fi and stereo equipment and home answering services were some of the many other diversified products highlighting the show.

On Wednesday, the last in a series of Consumer Electronics Conferences was held on the topic, "Television Games and Video Systems." The conference consisted of two panel presentations, the first regarding video systems and the second television games.

Those on the panel for the video systems discussion included top management from Advent, General Electric, GTE Sylvania, Quasar and RCA Sales Corp. According to the panelists, home projection television must be considered a new category of product from the television set, which will eventually develop into a complete home information center. Originally aimed toward the consumer market, the high cost of technology has made the home projection unit too expensive to mass merchandise successfully at the present. The general consensus of the panel is that by the early 1980's, the quality of the picture should be good enough and cost low enough for projection television to reach the consumer market.

The same panel touched on the

topic of TV games providing the audience with a perspective on the product's development from the television manufacturer's viewpoint.

Mr. Ken Thompson of G.T.E. Sylvania expressed the shared opinion of the panelists that TV game manufacturers should run standard tests to see what would make TV games compatible with all television sets regardless of brand. For example, Sylvania currently has the "GT-Matic" model, without horizontal or vertical control, which makes many games incompatible without an adaptor. Each of the panelists agreed that because video games are accessory items, the game manufacturers should absorb the costs involved in achieving this across-the-board compatibility.

The second portion of the conference focused in on the topic of video games with a panel comprised of game manufacturer representatives. Panel members included Nolan Bushnell of Atari, Inc., Arnold Fisher of Allied Leisure Industries, Inc., John Helms of Magnavox Consumer Electronics, Inc., and Sy Lipper of APF Electronics, Inc., with Art Weinberg of *Home Furnishings Daily* moderating.

Panel members predicted that as many as five million TV video games will be produced in 1976. Arnold Fisher of Allied Leisure indicated that in 1976, Allied alone expects to produce between 100,000 and 150,000 units. He estimated that of the total number of games produced in 1976, about three-fourths will be sold and delivered to the consumer market.

Both Nolan Bushnell of Atari and John Helms of Magnavox estimated that while significant, sales will be

closer to three or four million units based on long term experience in the video business. Considering that there is minimal inventory at the present and only eighty production days left until Christmas, it will be difficult to place five million on the market. Bushnell indicated that if manufacturers rush and do not properly test the games, the market could be flooded with technologically faulty video products. Furthermore, because the industry is new, several manufacturers might have problems meeting their delivery deadlines. Bushnell stated that TV game sales are definitely seasonal, building to a climax during the Christmas season through January and February and slacking off from March through the summer months.

Since the TV game is frequently displayed in the toy department of stores, the panelists were asked if they consider video games a toy and if toy manufacturers will become involved in producing them. For various reasons, the panel concluded that a toy/game distinction will become increasingly clear as the industry develops. Helms of Magnavox stated that TV games are close to toys but that as technology allows greater sophistication, based on microprocessing and large scale integration, TV games will tend away from the nature of the toy.

According to Bushnell, both toys and video TV games fall into the leisure time entertainment category, but a distinction can be drawn between them in that TV games are a technological product. "When dealing with warranties, TV games are taken out of the toy category and put into the technological long-term market," he added. If toy manufacturers are willing to make the technological investment, they will be in a position to compete in

(continued on page 44)

Mali

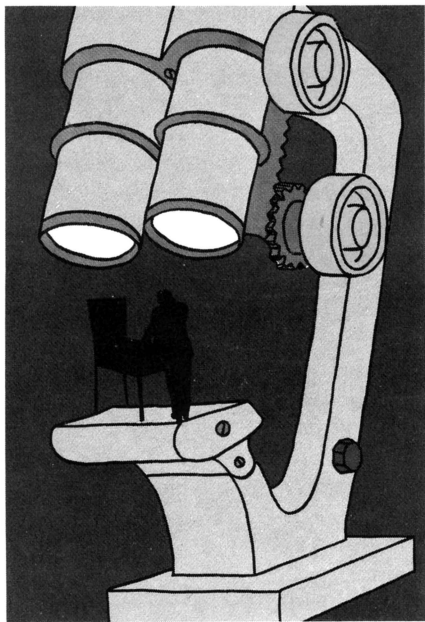
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Merry Pinball, Merry Pinball

by Roger Sharpe

After what was hopefully a successful foray last month, I'm back to try my hand at reviewing games. With summer in full swing it looks as if manufacturers in all areas are experiencing some good business days. We seem to be on the brink of a new awareness concerning the amusement game industry, a refreshing change of pace from years past.

How does all of this relate to the games themselves? From the standpoint of artwork and game graphics, we've entered into a new era of realism, not seen in such quantity since the 50's and very early 60's. Pinballs in particular are reflecting this move, with characterizations taking on very human qualities. Witness Capt. Fantastic with its almost lyrical rendition of Elton John or Space Mission and the

uncanny graphics of the Soyuz and Apollo link-up.

A new sensitivity has emerged as the games become more conscious of the world outside. Whether the results prove equitable remains to be seen, but for the time being, it holds the mirror up to nature better than the cubist and linear schemes of the late 60's or the infantile allure of the very early 70's artwork.

Anyway, this was just a thought to put forth to you as a *feature* of present day games. So now on to the reviews. As a brief reminder, the grading system which reflects both play appeal and artwork is as follows:

- #### excellent game
- ### good game
- ## average game
- # fair game

Chicago Coin's *SOUND STAGE*

I thought I would begin with this two-player because it's really an exciting proposition for Chicago Coin. In fact if they're not careful success may go to their heads *Sound Stage* follows closely on the heels of such noteworthy games as *Hollywood* and *Red Baron*, which more than held their own in the market place. A far cry from the days of *Pirate Gold* and *Astronaut* this new two-player adds some good, *sound* playing angles.

The game offers good balance throughout the playfield, with two targets at top-right, two at mid-left and two at mid right. In addition to the placement of the targets, they stand for something more than just points in the final analysis, whether it be lighting up an extra-ball lane or the special. The top right return lane moves the flow of the game into a new refreshing direction and the double bonus kick-out hole area is well situated with the thumper bumper just below. At the top left one finds a two lane-alternating bonus situation which blends in well with the whole structure of the top of the game.

What Chicago Coin likes to call their "Pinwheel Spinner" is nothing more than a stationary target which allows for beneath the field movement by the almost hypnotic graphic treatment. The Italian bottom holds up well to some player interaction with the game in the form of nudging. Plus the flippers

reflect an almost unnoticeable degree of change for the better, with the angle increased slightly to accommodate a wider range of shots. In terms of the whole game, there is much for the skillful player to try his hand at, and a saving grace for the less talented--the ever present two white roll-overs at either top side of the bonus counter.

The backglass and playfield colors border on the garish, but I liked them. Purples, reds, yellows and greens highlight the graphics and George M. outdid himself with the beauty on the back glass; she almost recalls the days of "Satin Doll," for what is a doll of a game.

Rating: ####

Gottlieb's *SURF CHAMP* (two-player *SURFER*)

This new Gottlieb entry has a little bit of everything in a game that features rather smooth play and very natural playing angles. For drop target fanatics, five grace the top left in a manner reminiscent of *Big Brave*, only better. The layout of the game gives fairly symmetrical balance with something here and something there. Top lanes start the action in a format similar to *Super Soccer* with the random bonus feature. A return lane at the top left also gives an increased bonus value and parlays the top into a well formed unit. Two thumper bumpers tend to segment the top and middle playfield action but in such a way that they add to the action rather than detracting from it. Also a kick-out hole at top right plays nicely with the top right bumper.

An interesting array of bright red roll-overs, which were so successful in *Spirit of '76*, offer a slight departure in placement. Now they are fanned out in a half arc, which neatly splits the game down the middle. At the middle one finds the lone spinner, standing far less protected than that on *Buccaneer*. Two side lanes can increase the bonus once the roll-overs are hit, to a double or triple value. The Italian bottom I perceived as being slightly narrower than usual, although the playfield color may have something to do with this; anyway the bottom works in tandem nicely with the movement of the game.

On the whole the game may at
(continued on page 43)

Top 20 Country

1	1	TEDDY BEAR	RED SOVINE/Starday SD 142
2	3	GOLDEN RING	GEORGE JONES & TAMMY WYNETTE/Epic 8 50235
3	5	THE LETTER	CONWAY & LORETTA/MCA 40672
4	2	THE DOOR IS ALWAYS OPEN	DAVE & SUGAR/RCA PB 10625
5	8	SAY IT AGAIN	DON WILLIAMS/ABC Dot DOA 17631
6	11	ONE OF THESE DAYS	EMMYLOU HARRIS/Reprise RPS 1353
7	6	VAYA CON DIOS	FREDDY FENDER/ABC Dot 17627
8	7	IS FOREVER LONGER THAN ALWAYS	PORTER & DOLLY/RCA PB 10652
9	16	ROCKY MOUNTAIN MUSIC/DO YOU RIGHT TONIGHT	EQDIE RABBIT/Elektra 45315
10	15	SAVE YOUR KISSES FOR ME	MARGO SMITH/Warner Bros. WBS 8213
11	17	BRING IT ON HOME TO ME	MICKEY GILLEY/Playboy 6075
12	9	WHEN SOMETHING'S WRONG WITH MY BABY	SONNY JAMES/Columbia 3 10335
13	14	IN SOME ROOM ABOVE THE STREET	GARY STEWART/RCA PB 10680
14	13	SOLITARY MAN	T. G. SHEPPARD/Hitsville 6032
15	20	REDNECK	VERNON OXFORD/RCA PB 10693
16	18	HEY SHIRLEY (THIS IS SQUIRRELY)	SHIRLEY & SQUIRRELY/GRT 054
17	19	HERE COMES THAT GIRL AGAIN	TOMMY OVERSTREET/ABC Dot DOA 17630
18	24	BECAUSE YOU BELIEVED IN ME	GENE WATSON/Capitol 4279
19	22	I MET A FRIEND OF YOURS TODAY	MEL STREET/GRT 057
20	25	YOU RUBBED IN ALL WRONG	BILLY CRASH CRADDOCK/ABC Dot DOA 17626

Top 20 Soul

1	2	YOU'LL NEVER FIND ANOTHER LOVE LIKE MINE	LOU RAWLS/Phila Intl. ZS8 3592 (CBS)
2	1	SOMETHING HE CAN FEEL	ARETHA FRANKLIN/Atlantic 3326
3	5	HEAVEN MUST BE MISSING AN ANGEL	TRAVARES/Capitol P 4270
4	6	GET UP OFFA THAT THING	JAMES BROWN/Polydor PD 14326
5	16	GETAWAY	EARTH, WIND & FIRE/Columbia 3 10373
6	3	THIS MASQUERADE	GEORGE BENSON/Warner Bros. WBS 8209
7	10	WHO'D SHE COO?	OHIO PLAYERS/Mercury 73814
8	14	(SHAKE, SHAKE, SHAKE) SHAKE YOUR BOOTY	KC & THE SUNSHINE BAND/TK 1019
9	7	KISS AND SAY GOODBYE	THE MANHATTANS/Columbia 3 10310
10	4	SOPHISTICATED LADY	NATALIE COLE/Capitol P 4259
11	9	TEAR THE ROOF OFF THE SUCKER (GIVE UP THE FUNK)	PARLIAMENT/Casablanca NB 856
12	28	PLAY THAT FUNKY MUSIC	WILD CHERRY/Epic-Sweet City 8 50225
13	8	YOUNG HEARTS RUN FREE	CANDI STATION/Warner Bros. WBS 8181
14	15	HEAR THE WORDS, FEEL THE FEELING	MARGIE JOSEPH/Cotillion 44201 (Atlantic)
15	21	ONE FOR THE MONEY	WHISPERS/Soul Train SB 10700 (RCA)
16	12	CAN'T STOP GROOVIN' NOW, WANNA DO IT SOME MORE	B.T. EXPRESS/Columbia 3 10346
17	18	FOXY LADY	CROWN HEIGHTS AFFAIR/De-Lite DEP 1581
18	27	SUMMER	WAR/United Artists XW834 Y
19	19	I'M GONNA LET MY HEART DO THE WALKING	THE SUPREMES/Motown M 1391F
20	11	SOMEBODY'S GETTIN' IT	JOHNNIE TAYLOR/Columbia 3 10334

Alphabetical Listing

A FIFTH OF BEETHOVEN RFT Music Pub. Corp. (RFT, BMI)	30	HARD WORK Esmond Edwards (Hard Work, BMI)	68	MISTY BLUE Tom Couch & James Stroud (Talmonte, BMI)	43	STRANGER Billy Sherrill (Reseca, BMI)	83
A LITTLE BIT MORE Ron Haffkine (Bygones, ASCAP)	44	HEAVEN MUST BE MISSING AN ANGEL F. Perren (Bull Pen, BMI; Perren-Vibes, ASCAP)	32	MOONLIGHT FEELS RIGHT Bruce Blackmar & Mike Clark (Brother Bill's, ASCAP)	4	STREET SINGIN' Barry Manilow & Ron Danie (Kamakazi/Angel Dust, BMI)	70
AFTERNOON DELIGHT Milton Okun (Cherry Lane, ASCAP)	1	HOLD ON Keith Olsen (JSH, ASCAP)	67	MORE, MORE, MORE Gregg Diamond (Buddah/Gee Diamond, ASCAP)	3	SUMMER Jerry Goldstein (Far Out, ASCAP)	47
ANOTHER RAINY DAY IN NEW YORK CITY James William Guericco (Big Elk/Laminations, ASCAP)	31	HONEY CHILD Bad Company (Badco, ASCAP)	97	MOVIN' Jeff Lane (Desert Moon Ltd./Jeff-Mar, BMI)	56	TAKE THE MONEY AND RUN Steve Miller (Sailor, ASCAP)	26
BABY, I LOVE YOUR WAY Peter Frampton (Almo/Fram-Dee, ASCAP)	27	HOT STUFF Glimmer Twins (Promopub, B.V., ASCAP)	78	NEVER GONNA FALL IN LOVE AGAIN Jimmy Ienner (C.A.M./U.S.A., BMI)	42	TEAR THE ROOF OFF THE SUCKER (GIVE UP THE FUNK) George Clinton (Malbiz & Ricks, BMI)	8
BOOGIE FEVER Freddie Perren (Perren Vibes/Bull Pen, ASCAP/BMI)	48	I NEED TO BE IN LOVE Richard Carpenter (Almo/Sweet Harmony/Hammer and Nail/Landes-Roberts, ASCAP)	38	ODE TO BILLY JOE Kelly Gordon & Bobby Paris (Larry Shayne, ASCAP)	94	THAT'S WHERE THE HAPPY PEOPLE GO Baker, Harris & Young (Burma East, BMI)	92
CAN'T CHANGE MY HEART Steve Cropper (Flat River, BMI)	93	I'D REALLY LOVE TO SEE YOU TONIGHT K. Lehning (Dawnbreaker, BMI)	23	ONE FOR THE MONEY Norman Harris (Golden Fleece/Hip Trip/Writers, BMI)	98	TEDDY BEAR Tommy Hill (Cedarwood, BMI)	45
CAN'T STOP GROOVIN' NOW, WANNA DO IT SOME MORE Jeff Lane (Blackwood, BMI)	95	IF YOU KNOW WHAT I MEAN Robbie Robertson (Stonebridge, Lion's Gate/Easy, ASCAP)	29	PARTY Van McCoy (Warner-Tamerlane, BMI)	72	THE BOYS ARE BACK IN TOWN John Alcock (RSO, ASCAP)	22
C'MON MARIANNE Mike Curb (Saturday/Season's Four, BMI)	63	I'M GONNA LET MY HEART DO THE WALKING Brian Holland (Holland-Dozier-Holland)	21	PLAY THAT FUNKY MUSIC Robert Parissi (Bema/Blaze, ASCAP)	19	THE MORE YOU DO IT (THE MORE I LIKE IT DONE TO ME) M. Yancy & C. Jackson (Jay's Ent./Chappell, ASCAP)	84
CRAZY ON YOU Mike Flicker (How About Music, CAPAC)	71	I'VE BEEN LOVIN' YOU D. Weinreich/Easy Street (No exit, BMI)	59	POPSICLE TOES Tommy LiPuma (Mississippi Mud, BMI)	88	THIS MASQUERADE Tommy LiPuma (Skyhill, BMI)	14
DANCIN' KID Kelly Gordon & Bobby Paris (Dawson's Cove/Kenny Nolan/Coral Rock, ASCAP)	85	IT KEEPS YOU RUNNIN' Ted Templeman (Taurpin Tunes, ASCAP)	75	RAINBOW IN YOUR EYES Leon & Mary Russell (Teddy Jack, BMI)	99	TODAY'S THE DAY George Martin (Warner Bros., BMI)	87
DEVIL WOMAN B. Welch (Chappell, ASCAP)	51	I WANT YOU Leon Ware & T-Boy Ross (Almo-Jobette, ASCAP)	58	RHIANNON (WILL YOU EVER WIN) Fleetwood Mac & Keith Olsen (Rockhopper, BMI)	100	TRY ME . . . I KNOW . . . WE CAN MAKE IT Giorgio Moroder & Pete Bellote (Sunday/Rick's, BMI)	91
DON'T GO BREAKING MY HEART Gus Dudgeon (Big Pig/Leeds, ASCAP)	6	I'LL BE GOOD TO YOU Quincy Jones (Kidada/Gouldris, BMI)	24	ROCK AND ROLL MUSIC Brian Wilson (Arc, BMI)	10	TURN THE BEAT AROUND Warren Schatz (Dunbar, BMI)	18
FOOLED AROUND AND FELL IN LOVE Alan Blazek & Bill Szymczyk (Crabshaw, ASCAP)	55	KISS AND SAY GOODBYE Bobby Martin (Nathanam/Blackwood, BMI)	2	SARA SMILE Christopher Bond, Daryl Hall & John Oates (Unichappell, BMI)	50	UP THE CREEK WITHOUT A PADDLE Jeffrey Bowen & Berry Gordy (Stone Diamond, BMI)	81
FOOL FOR THE CITY Nick Jameson (Knee Trembler, ASCAP)	61	LAST CHILD Jack Douglas & Aerosmith (Daksel/Song and Dance/Vinaloo, BMI)	41	SAY YOU LOVE ME Fleetwood Mac & Keith Olsen (Gentoo, BMI)	40	WAKE UP SUSAN Thom Bell (Mighty Three, BMI)	73
FOOL TO CRY The Glimmer Twins (Promopub, B.V., ASCAP)	78	LET 'EM IN Paul McCartney (MPL Communications by Arrangement with ATV, BMI)	13	SHAKE, SHAKE, SHAKE SHAKE YOUR BOOTY Casey-Finch (Sherlyn, BMI)	35	WHAM BAM SHANG-A-LANG Tom Sellers & Clive Davis (Colgems, ASCAP)	54
FOXY LADY Nerangis/Britton (Delightful, BMI)	57	LET HER IN Bob Reno (Midsong, ASCAP)	12	SHANNON Cashman and West (Blending-well, ASCAP)	39	WELCOME BACK Steve Barri & John Sebastian (John Sebastian, BMI)	53
FRAMED Lou Adler (Quintet/Freddy Bientock, BMI)	60	LIVIN' AIN'T LIVIN' Jim Mason (Stephen Love, ASCAP)	52	SHE'S GONE Arif Mardin (Unichappell, BMI)	96	WHO'D SHE COO? Ohio Players (Tight Corporation/Unichappell, BMI)	69
GETAWAY Maurice White & Charles Stepney (Kalimba, ASCAP)	62	LOVE HANGOVER Hal Davis (Jobette, ASCAP)	34	SHOP AROUND The Captain and Toni Tennille (Jobette, ASCAP)	11	WITH YOUR LOVE Larry Cox and Jefferson Starship (Diamond Back, BMI)	86
GET CLOSER Louis Shelton (Dawnbreaker, BMI)	5	LOVE IS ALIVE Gary Wright (Warner Brothers, ASCAP)	7	SILLY LOVE SONGS Paul McCartney (MPL Communications Inc. by Arr. with ATV, BMI)	25	YOUNG HEARTS RUN FREE Dave Crawford (Dee-Ann, ASCAP)	20
GET UP OFFA THAT THING James Brown (Dyanotone/Belinda/Unichappell, BMI)	76	LOWDOWN Joe Wissert (Boz Scaggs/Hudmar, ASCAP)	65	SOMETHING HE CAN FEEL Curtis Mayfield (Warner-Tamerlane, BMI)	28	YOU'RE MY BEST FRIEND Roy Thomas Baker (Trident, ASCAP)	16
GET UP AND BOOGIE Michel Kunze (Midsong, ASCAP)	36	MAGIC MAN Mike Flicker (Andorra, BMI)	80	SOPHISTICATED LADY Jackson, Yancy, Barge & Evans (Jay's Enterprises/Chappell, ASCAP)	33	YOU'LL NEVER FIND ANOTHER LOVE LIKE MINE Gamble & Huff (Mighty Three, BMI)	15
GOOD VIBRATIONS Todd Rundgren (Irving, BMI)	49	MAKING OUR DREAMS COME TRUE Janna Marilyn Feliciano & Charles Fox (Bruin, BMI)	64	SPRINGTIME MAMMA Terry Cashman & Tommy West (Blending-well, ASCAP)	66	YOU SHOULD BE DANCING Bee-Gees (Casseroles/Unichappell, BMI)	17
GOT TO GET YOU INTO MY LIFE producer not listed (MacLen, BMI)	9	MAMMA MIA Bjorn Ulvaeus & Benny Anderson (Countess, BMI)	46	STILL THE ONE Chuck Plotkin (Siren, BMI)	79	YOU TO ME ARE EVERYTHING Ken Gold (Colgems, ASCAP)	74
HAPPY DAYS Steve Barri & Michael Omartian (Bruin, BMI)	82	MARY HARTMAN, MARY HARTMAN (THEME) M. Manieri & D. Spinozza (Southern, ASCAP)	89	STEPPIN' OUT Neil Sedaka & R. Appere (Don Kirshner/Kirshner Songs, BMI)	37		

Jukebox

TITLE, ARTIST, Label, Number, (Distributing Label)
Now Was

WKS. ON
CHART

Now Was

1	3	AFTERNOON DELIGHT STARLAND VOCAL BAND Windsong CB 10588 (RCA)	13
2	2	KISS AND SAY GOODBYE THE MANHATTANS/Columbia 3 10310	14
3	1	MORE, MORE, MORE ANDREA TRUE CONNECTION/ Buddah BDA 515	21
4	5	MOONLIGHT FEELS RIGHT STARBUCK/Private Stock 039	15
5	7	GET CLOSER SEALS & CROFTS/Warner Bros. WBS 8190	13
6	10	DON'T GO BREAKING MY HEART ELTON JOHN & KIKI DEE/ Rocket PIG 40585 (MCA)	5
7	4	LOVE IS ALIVE GARY WRIGHT/Warner Bros. WBS 8143	15
8	9	TEAR THE ROOF OFF THE SUCKER (GIVE UP THE FUNK) PARLIAMENT/Casablanca NB 856	13
9	13	GOT TO GET YOU INTO MY LIFE BEATLES/Capitol P 4274	8
10	14	ROCK AND ROLL MUSIC BEACH BOYS/Brother-Reprise RPS 1354 (WB)	9
11	6	SHOP AROUND CAPTAIN & TENNILLE/A&M 1817	14
12	12	LET HER IN JOHN TRAVOLTA/Midland Intl. MB 10623 (RCA)	13
13	21	LET 'EM IN WINGS/Capitol P 4293	5
14	18	THIS MASQUERADE GEORGE BENSON/Warner Bros. WBS 8209	8
15	20	YOU'LL NEVER FIND ANOTHER LOVE LIKE MINE LOU RAWLS/ Phila. Intl. ZS8 3592 (CBS)	12
16	17	YOU'RE MY BEST FRIEND QUEEN/Elektra 45318	11
17	26	YOU SHOULD BE DANCING BEE GEES/RSO 853 (Polydor)	5
18	19	TURN THE BEAT AROUND VICKI SUE ROBINSON/ RCA PB 10562	12
19	25	PLAY THAT FUNKY MUSIC WILD CHERRY/Epic/Sweet City 8 50225	7
20	23	YOUNG HEARTS RUN FREE CANDI STATON/Warner Bros. WBS 8181	14
21	24	I'M EASY KEITH CARRADINE/ABC 12117	8
22	11	THE BOYS ARE BACK IN TOWN THIN LIZZY/Mercury 73786	12
23	28	I'D REALLY LOVE TO SEE YOU TONIGHT ENGLAND DAN AND JOHN FORD COLEY/Big Tree BT 16069 (Atlantic)	8
24	8	I'LL BE GOOD TO YOU BROTHERS JOHNSON/A&M 1806	14
25	15	SILLY LOVE SONGS WINGS/Capitol P 4256	17
26	16	TAKE THE MONEY AND RUN STEVE MILLER/Capitol 4260	12
27	32	BABY, I LOVE YOUR WAY PETER FRAMPTON/A&M 1832	7
28	29	SOMETHING HE CAN FEEL ARETHA FRANKLIN/Atlantic 3326	9
29	30	IF YOU KNOW WHAT I MEAN NEIL DIAMOND/Columbia 3 10366	8
30	44	A FIFTH OF BEETHOVEN WALTER MURPHY & THE BIG APPLE BAND/Private Stock 073	9

31	31	ANOTHER RAINY DAY
32	38	HEAVEN MUST BE HERE
33	33	SOPHISTICATED LAD
34	27	LOVE HANGOVER DI
35	54	(SHAKE, SHAKE, SHAKE) KC
36	22	GET UP AND BOOGIE
37	41	STEPPIN' OUT NEIL S
38	39	I NEED TO BE IN LOVE
39	35	SHANNON HENRY GFI
40	50	SAY YOU LOVE ME
41	43	LAST CHILD AEROSM
42	36	NEVER GONNA FALL
43	34	MISTY BLUE DOROTH
44	52	A LITTLE BIT MORE D
45	55	TEDDY BEAR RED SO
46	47	MAMMA MIA ABBA/
47	59	SUMMER WAR /United
48	37	BOOGIE FEVER SYLV
49	45	GOOD VIBRATIONS T
50	42	SARA SMILE DARYL H
51	60	DEVIL WOMAN CLIFF
52	49	LIVIN' AIN'T LIVIN' F
53	40	WELCOME BACK JOH
54	63	WHAM BAM SHANG
55	53	FOOLED AROUND AN
56	46	MOVIN' BRASS CON
57	62	FOXY LADY CROWN
58	56	I WANT YOU MARVI
59	61	I'M GONNA LET MY
60	48	FRAMED CHEECH & C
61	51	FOOL FOR THE CITY
62	71	GETAWAY EARTH, W
63	57	C'MON MARIANNE D
64	58	MAKING OUR DREAM
65	79	LOWDOWN BOZ SCA
66	74	SPRINGTIME MAMA
67	70	HOLD ON SONS OF
68	77	HARD WORK JOHN I

Charts cou

TOP 100

	WKS. ON CHART
NEW YORK CITY CHICAGO/ Columbia 3 10360	6
AN ANGEL TAVARES/ Capitol P 4270	8
ITALIE COLE/Capitol P 4259	9
ROSS/Motown M 1392F	24
HAKE YOUR BOOTY D THE SUNSHINE BAND/TK 1019	5
VER CONVENTION/Midland Intl. MB 10571 (RCA)	19
KA/Rocket PIG 40582 (MCA)	7
ARPENTERS/A&M 1828	9
/Lifesong LS 45002	24
TWOOD MAC/Reprise RPS 1356 (WB)	4
Columbia 3 10359	7
OVE AGAIN ERIC CARMEN/ Arista 0184	14
MOORE/Malaco M 1029 (TK)	22
OOK/Capitol P 4280	6
E/Starday SD 142	3
ntic 3315	10
tists XW834 Y	4
Capitol P 4179	28
RUNDGREN/Bearsville BSS 0309	10
& JOHN OATES/RCA PB 10530	25
CHARD/Rocket PIG 40574 (MCA)	5
ALL/Atlantic 3333	8
BASTIAN/Reprise RPS 1349 (WB)	19
ANG SILVER/Arista 0189	5
LL IN LOVE ELVIN BISHOP/ Capricorn CPS 0252 (WB)	22
CTION/United Artists XW775 Y	20
GHTS AFFAIR/De-Lite DEP 1581	5
AYE/Tamla T 54264F (Motown)	15
RT DO THE WALKING THE SUPREMES/Motown M 1391F	7
NG/Ode 66124 (A&M)	9
GHAT/Bearsville BSS 0307 (WB)	10
& FIRE/Columbia 3 10373	4
NY OSMOND/Polydor PD 14320	9
OME TRUE CYNDI GRECCO/ Private Stock 086	13
/Columbia 3 10367	5
RY GROSS/Lifesong LS 45008	4
AMPLIN/Ariola America P 7627	7
Y/ABC Impulse IMP 310005	7

Now	Was		WKS. ON CHART
69	81	WHO'D SHE COO? OHIO PLAYERS/Mercury 73814	2
70	78	STREET SINGIN' LADY FLASH/RSO 852 (Polydor)	3
71	75	CRAZY ON YOU HEART/Mushroom M 7021	13
72	87	PARTY VAN McCOY/H&L 4670	3
73	73	WAKE UP SUSAN SPINNERS/Atlantic 3341	4
74	83	YOU TO ME ARE EVERYTHING THE REAL THING/ United Artists XW833 Y	2
75	76	IT KEEPS YOU RUNNIN' CARLY SIMON/Elektra 45323	6
76	85	GET UP OFFA THAT THING JAMES BROWN/ Polydor PD 14326	3
77	80	ROCKY MOUNTAIN MUSIC EDDIE RABBITT/Elektra 45315	6
78	65	FOOL TO CRY/HOT STUFF ROLLING STONES/Rolling Stones 19304 (Atlantic)	15
79	88	STILL THE ONE ORLEANS/Asylum 45336	2
80	89	MAGIC MAN HEART/Mushroom M 7011	2
81	82	UP THE CREEK WITHOUT A PADDLE TEMPTATIONS/Gordy G 7150F (Motown)	5
82	64	HAPPY DAYS PRATT & McCLAIN/Reprise RPS 1351 (WB)	19
83	84	STRANGER JOHNNY DUNCAN/Columbia 3 10302	4
84	86	THE MORE YOU DO IT, THE MORE I LIKE IT DONE TO ME RONNIE DYSON/Columbia 3 10356	4
85	90	DANCIN' KID DISCO TEX & THE SEX-O-LETES/Chelsea CH 3045	4

CHARTMAKER OF THE WEEK

86	—	WITH YOUR LOVE JEFFERSON STARSHIP Grunt FB 10746 (RCA)	1
87	69	TODAY'S THE DAY AMERICA/Warner Bros. WBS 8212	12
88	—	POPSICLE TOES MICHAEL FRANKS/Reprise RPS 1360 (WB)	1
89	92	MARY HARTMAN, MARY HARTMAN (THEME) THE DEADLY NIGHTSHADE/Phantom PB 10709 (RCA)	4
90	96	I'VE BEEN LOVIN' YOU EASY STREET/Capricorn CPS 0255 (WB)	3
91	93	TRY ME . . . I KNOW . . . WE CAN MAKE IT DONNA SUMMER/Oasis 406 (Casablanca)	3
92	66	THAT'S WHERE THE HAPPY PEOPLE GO THE TRAMMPS/ Atlantic 3306	14
93	94	CAN'T CHANGE MY HEART THE CATE BROTHERS/Asylum 45326	3
94	97	ODE TO BILLY JOE BOBBIE GENTRY/Capitol P 4294	2
95	95	CAN'T STOP GROOVIN' NOW, WANNA DO IT SOME MORE B.T. EXPRESS/Columbia 3 10346	5
96	—	SHE'S GONE DARYL HALL & JOHN OATES/Atlantic 3332	1
97	98	HONEY CHILD BAD COMPANY/Swan Song 70109 (Atlantic)	2
98	—	ONE FOR THE MONEY WHISPERS/Soul Train SB 10700 (RCA)	1
99	100	RAINBOW IN YOUR EYES LEON & MARY RUSSELL/ Paradise 8208 (WB)	2
100	68	RHIANNON FLEETWOOD MAC/Reprise RPS 1345 (WB)	22

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RIP-OFFS AND ALL THAT JAZZ

by Michael B. Klein

I read about a recent development in the record business the other day. In a way it is interesting, and conversely it is absurd. Perhaps by now you have heard about it, but I found it to be amazing, and I think it's worth a mention.

It seems as though a record company called Salsoul has come out with a revolutionary (no pun intended) new breakthrough in discs. Their hype is that one can now be his own disc jockey at home. Now there's no need to spend money to go to a disco. The new Salsoul Disco label is devoted to making extended disco mixed versions of tunes on a 12" 45 rpm record.

According to Salsoul, these longer disco versions have accentuated bass, horn and string lines, and supposedly have better sound quality than the conventional 45 record, especially when too much music is squeezed onto one side. So now, each side contains a different mix of the current hot disco turn, *Ten Percent*. One version is a 9 minute 15 second version, and the other side contains a 7 minute 7 second version of the same tune.

The list price of this rip-off item is an outrageous \$2.98. So for 16 minutes and 22 seconds worth of music, the consumer ends up paying almost the price he would pay for an LP. The way I figure it, for one dollar more, he can have about 30 minutes more music with an LP.

The point is this, I hope the consumer passes this by with his nose in the air and his ears closed, but for you it might be a very interesting merchandising tool.

Consider offering one play of this tune for the price of two single plays. Obviously there would have to be adjustments made in your jukebox for this record is 12 inches. It's a thought.

With all that in mind, the appropriate place for music in elongated versions is jazz and soul. They always tend to be longer tunes anyway because of improvisation. This month, though, we'll review some records that are just as good in short versions as in long ones.

HARD WORK--John Handy/ABC 31005

Veteran jazzman John Handy has been in semi-retirement for the past eight years or so. He has been teaching his art at various colleges in California. But on the sly, he has also been learning and perfecting the new techniques and styles of today's music. This single has the infectious sound that is really jazz at its best yet will appeal to all listeners. Its lyrics are repetitive but the type that you can't shake once you've heard them. This is a refreshing tune, particularly if disco music continues to branch out into jazz rather than jazz deteriorating into disco music.

SUNSHINE--Sonny Fortune/Horizon 101

Here's an atmospheric instrumental from saxophonist/flautist Sonny Fortune. He is backed up by an outstanding group, Awakening. The tune is a spirited and dazzling jazz piece, that has been edited down (not watered down) to a four minute version. It's sure to capture all jazz buffs. A super fine effort. It

belongs on any playlist where you have a jazz/soul clientel.

GIVE HIM SOMETHING HE CAN FEEL--Aretha Franklin/Atlantic 45-3326

Our Lady Soul is back again with a sure hit. Aretha is sheer delight. she seems to be back in the groove that she was in some years back on some of her earlier Atlantic sides. Enhanced by a sparse yet demanding arrangement, her vocal interplay with the background is simply magnificent. And the tune, written by Curtis Mayfield, from the film *Sparkle*, commands attention to both Curtis's writing ability and Aretha's singing ability. Yes, Yes, Yes!

KEEP THAT SAME OLD FEELING--Jazz Crusaders/ABC/Blue Thumb-BTA 269

The title here doesn't correspond with the Crusaders. They haven't kept that Same Old Feeling in their music. Their style has changed dramatically since they first arrived on the jazz scene many years ago. But we all bend and sway to commercialism when it's time to make money, don't we? Anyway, they have a hot single on their hands here with some fine riffs, and great sound. Very jazzy soul, a good number for younger audiences.

Don't let anyone try to tell you jazz isn't popular. It's just as popular, if not more so now, than it was during its younger years, some 50 years ago. Music fads will come and go, but jazz is here to stay. And I'm pleased

Freedom of Choice

That's what reading magazines is all about. You choose what you want to read, when you want to read it. You have the freedom to properly assess what you like in these pages at your leisure.

Reading *Play Meter* also gives you the freedom to compare product information from the coin-operated amusements manufacturers and service companies. If you would like to learn more about our advertisers and their products or services, feel free to find them in this alphabetical listing, then circle the corresponding number on our Reader Service Card between pages 4 and 7.

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3. Bally Mfg. Corp. 9		14. Midway Mfg. 15	
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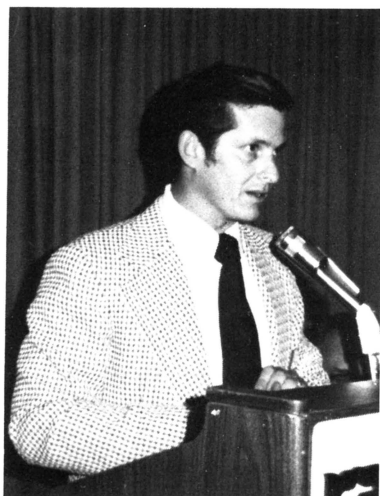
Please unfold page
for Play Meter's
Jukebox Top 100

Association News

MOM Meet Big Success

The annual convention of the Music Operators of Minnesota was held at the Radisson South Hotel in Minneapolis on June 4-6. The event combined the association's annual meeting with its first trade show and was the best attended and most successful convention in the association's history.

Attendance at the convention exceeded 150, double the previous high. Thirty-three show booths were filled with exhibitors from



Newly elected president Richard Hawkins addresses the Music Operators of Minnesota Convention. Hawkins succeeds Harlow Norberg.

several states including California, Illinois, New Jersey, Texas, Pennsylvania, Wisconsin and Minnesota. The show, which was sold out, was such a success that MOM is planning to hold it again next year.

Elected president to succeed Harlow Norberg of Mankato was Richard Hawkins of D & R Novelty, Rochester, Minnesota. Other new officers include Vice President Martin Kallsen of Worthington, Secretary Darell Weber of Blue Earth and Treasurer Jesse Farkas of Minneapolis.

Speakers at the convention included Fred Granger, executive vice president of the Music Operators of America, who brought the conventioners up to date on copyright

legislation and the latest activities of MOA. MOA President Ted Nichols, who spoke on "Operating Analysis and Strategies," a presentation developed by Dr. John Malone of the University of Notre Dame, and Russ Dougherty, secretary-treasurer of the Wisconsin Music Merchants Association, who explained Wisconsin's apprenticeship program, its history and what it entails. Dougherty urged MOM to consider initiating such a program.

The annual business meeting included the usual minutes and financial report and a legislative report from counsel, Bill Brooks and Dave Kuduk.

The convention concluded with a buffet breakfast and a shirtsleeve discussion entitled "Your Business and Mine--The Rights and the Wrongs." Acting as moderator was Wally Boheer, president of the Wisconsin Music Merchants Association.

WMMA Sets Times

The Wisconsin Music Merchants Association has announced time and place for its 1976 convention. The convention will be held October 2-3 at the Holiday Inn in Wausau. The theme of this year's event is "The Big Sound."

Tentatively scheduled to appear as special guest speaker is Washington attorney Rufus King. King, a widely known figure in the industry, is justly acclaimed as an expert in pinball legislation. He has been actively involved in the passage of free play bills in various states and is currently researching this matter for WWMA.

Plans for the 1977 spring convention and show have also been announced. Once again the event will be held at the Scotland Resort, Oconomowoc, Wis. It is scheduled for the weekend of March 18-20.

Colorado Group Organizes

The Colorado Coin Industries first annual convention was held June 11-13 at the Colorado Hotel, Greenwood Springs. Pre-registration and socializing Friday afternoon was followed by a golf tournament for ladies and men on Saturday morning. There was swimming and sunbathing at the mineral springs pool, tennis or sight-seeing for non-golfers.

The business meeting Saturday afternoon saw Chuck Esch elected president of the association. John Weber was elected vice president and Thelma Ross, secretary-treasur-

er.

An open bar and banquet provided by Continental Divide, Mountain Coin and Rowe-Denver Saturday evening provided an opportunity for the presentation of the officers to the membership. This was followed by a report from lobbyist Iris Mullen and presentation of the golf trophies to Mrs. B.I. Smith of Colorado Springs and Jerry Gordon of Continental Divide in Denver.

Seventy people, operators from all over the state and from Wyoming and Nebraska, attended the dinner.



(continued from page 14)

success or the lack of success of each individual game at each location. We know what our machines take per day and consequently we know when we have to move a machine, and that's really the important thing.

PLAY METER: How do you know what a machine's day-to-day take is? Surely you don't send someone out to collect daily.

LESLIE: No, we empty once a week and then we break down that weekly collection into a daily average. So what happens is we don't look at our averages per week, we look at our averages per day.

PLAY METER: So what's the pull point? In other words, what amount does the machine reach in order for you to know it has to be pulled or replaced?

LESLIE: When it drops below an unacceptable level.

PLAY METER: What is the unacceptable level or does that depend on the purchase price of the machine?

LESLIE: No, it depends on our own feelings about a site and the availability of new equipment. But generally if a machine drops below 30 pounds (\$60.00) a week take, we would want to move it.

PLAY METER: What do you do when a new game comes out? Keeping the original "tennis problem" in mind, do you buy a certain percentage of each new model or do you buy one of each new game or what? How do you handle your purchases?

LESLIE: As the Atari distributors we take four samples of every new game, regardless; that's automatic. Atari will ship us four new games every time something new comes out. The exception is the large arcade pieces.

PLAY METER: Is this in advance of production?

LESLIE: No, this is when production starts. So, what happens is I take two of the four games for sales, because that's my thing, and the operation gets two and we start testing. But of course, we feel we are sufficiently well-versed in games now to be a reasonable judge in advance, and we believe we know when a good game comes out. Still the only real answer can be in the coinbox.

So far as the operation is concerned, apart from the samples, which we test, and assuming we like the samples, we order a range of games. But as the distributors we carry the range anyway. We are never going to be in a position that we are only carrying one game--we'll always be carrying a range.

We only operate Atari games, but at any time, we will have the full range of Atari games available.

PLAY METER: What happens when somebody else comes out with a super fantastic game? Would you operate it or is this something that would conflict with your contracts with Atari?

LESLIE: No, as far as operating is concerned, we are at liberty to operate whatever we please. Up to date though, our loyalty has been totally to Atari. We are completely satisfied with the Atari games. We are making good money with Atari.

It is quite conceivable that, if somebody comes up with that fabulous game you're talking about, we

would buy some of those games and operate them, but we would not sell them. There's the difference: we only sell Atari.

PLAY METER: What if one of the games you test turns out to be a dud, then what happens?

LESLIE: As a group, the Cherry Group, talking about the Scandinavian as well as the English operation, we seldom would order less than fifty of any one piece for our own use. We don't want to because when we are going to operate a machine we want to carry the spares. In order to carry spares, to make it worth your while carrying the spares, you have to have a reasonable number of machines.

So if we are going to order a game at all, we would order a minimum of fifty. If a game doesn't appeal or doesn't test well, we probably won't run it at all, in either sales or operation.

PLAY METER: You would just take a loss on the machine?

LESLIE: No, we would let that particular game run in our operation. We would not pull that machine off and throw it away, but we wouldn't go any further with it.

PLAY METER: You would try to get your money back out of it?

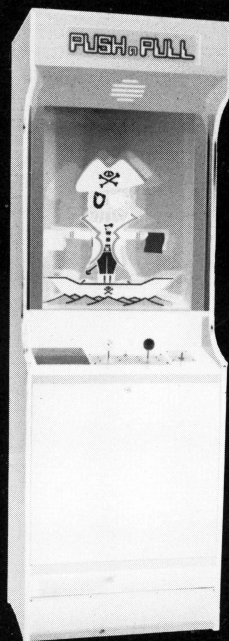
LESLIE: Oh naturally! Or sell it if we can and if it's necessary. But we have never yet had a game we couldn't find a space for in the operation. And it is always another game to rotate, you know, whether it's good or bad.

PLAY METER: How have you overcome service problems? Obviously you cannot stock hundreds of

(continued on page 40)

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Birthday Salute

"The United States--despite our current problems and the difficulties that we have come through these past two hundred years--is still a very special country."

This is the opening sentence in a letter, signed by Nathan Feinstein, president of World Wide Distributors Co. of Chicago, that accompanies a beautiful copy of the original Constitution of the United States. Mailed to operators throughout the World Wide business area just prior to the Fourth of July celebration, it reproduces the original hand-written version of the Constitution, showing the many changes made before agreement by the founding fathers. It also contains the same document set in type for easier readability.

Feinstein's letter points out, "It [the Constitution] was written with sweat, argument, compromise. But

what a bulwark it has been for our liberties."

World Wide is a Chicago-based division of American Recreation Group and is distributor for Seeburg, Lektro-Vend, Choice-Vend and Polyvend plus a full line of complementary equipment for the vending and coin amusement industries.

Belam Goes Domestic

R.H. Belam Co., Inc. has been appointed distributor of Seeburg phonograph and vending and Williams electronic products for the state of Florida. The announcement was made by William F. Adair, vice president for marketing and sales, Seeburg Products Division.

The Belam office, to be known as Belam-Florida, a division of R.H.

Belam Co., Inc., is located at 1541 Northwest 165th St., Miami. The division is headed by Marc Haim and the day-to-day operational responsibilities will be handled by General Manager Murray Kaye, formerly of Atlantic New York Corp., a long-time associate of Seeburg.

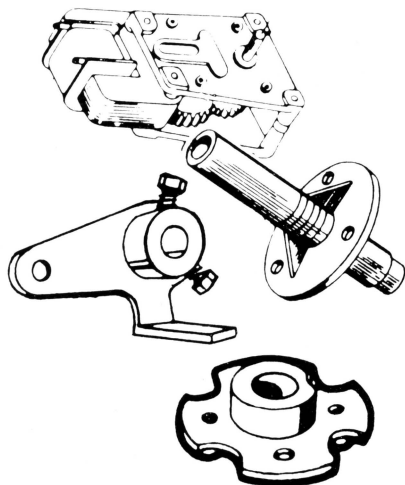
Upon conclusion of the negotiations, Adair said, "The R.H. Belam Co. brings thirty years of experience and success in the coin industry to the family of Seeburg. Their knowledge of industry and operating needs in equipment, service and parts will enhance operating conditions in the state of Florida which is one of the more rapidly growing areas in the country.

"It is extremely gratifying," Adair continued, "that Victor Haim, president of the R.H. Belam Co., in their expansion program has selected to the products of Seeburg to embark upon domestic distribution."



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Atari Sets Class

Atari, Inc. has scheduled a special seminar to acquaint operators and distributors with techniques designed to troubleshoot problems associated with Atari's new microprocessor-based games. The seminar will be held at Atari headquarters in Los Gatos, Cal. on August 23 and 24.

Sessions will be conducted primarily by Dan Van Elderen from Atari's engineering department. Atari test fixtures will be set up enabling participants to gain practical hands-on experience using a game currently in production.

Plans are also being formulated for a similar service seminar to be held in the Chicago area for Atari's eastern distributors. Dates for this seminar have not yet been set.

Those wishing to attend the Atari seminar, or receive additional information about it, should contact Don Smith, manager of customer services at Atari Inc., 2175 Martin

(continued on page 32)



Death Race Rerun

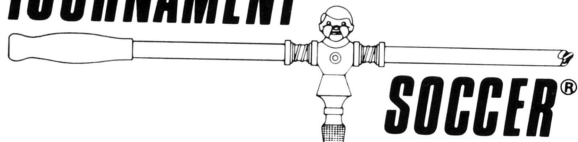
On July 1, Paul Jacobs, director of marketing for Exidy Inc., Mountain View, Cal., received a phone call from Wendy Walker of the Associated Press. It seems that Ms. Walker had ventured into the Seattle Center Arcade and noticed a

line of people waiting to play the game Death Race. She was curious to know why the game was so popular.

Her interview with Jacobs resulted in a story carried over the AP

(continued overpage)

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wire and picked up by major newspapers across the country. Though Jacobs was badly misquoted in the story, the result has been a rash of new business for the game.

"We had just about completed our second release on Death Race and were intending to wind down the run when the story hit," Jacobs said. "The result has been that we have made a third release on the game and sales are definitely better than ever.

"I have personally been interviewed by about fifteen radio stations across the United States and Canada. National publications including *Midnight* and *National Enquirer* have run stories on me and Europe's largest magazine, *Stern*, is doing an article on it.

"Also, mini-cam television interviews have been done with two of our customers, namely Advance Distributing in St. Louis and Brady Distributing in Charlotte," Jacobs added.

"Death Race's obvious acceptance by the general public is evidenced by looking in the cash box. It's always full of quarters!" concluded the elated Jacobs.

Test Models Out

Test models for O.B.A., Inc.'s Challenger Fussball are out. The tournament table, in development since November of last year, is designed for the operator in the North and Far West where players require smaller goals, solid rods and



O.B.A.'s Bill Ohland and Joe Peters of Wildcat Chemical.

a slick playing surface.

The Challenger tournament model has improved features which allow the player to bank the ball

more easily. In addition, the table is extremely durable. Stringent quality control assures the operator of a table with long life and few parts replacements. The Challenger tournament model also has an adjustable 9 or 11 ball positive drop to prevent players from "stuffing" the table with extra balls.

Atari Classes

(continued from page 31)

Ave., Santa Clara, Cal. 95050, telephone (408) 984-1900.

In addition, Atari Field Service Engineer Fred McCord has planned a series of operator training seminars for both August and September. The distributor-hosted seminars will take place August 12-13 in New Orleans, August 16-17 in Columbia, S.C. and August 19-20 in Charlotte, N.C. Rowe International will serve as host for the first two of these, Brady Distributing for the last.

The September classes will be held Sept. 13-14 in Columbus, Ohio, Sept. 16-17 in Cleveland and Sept. 23-24 in Montreal. Cleveland Coin will host the two Ohio seminars with Rowe again hosting the one in Canada.

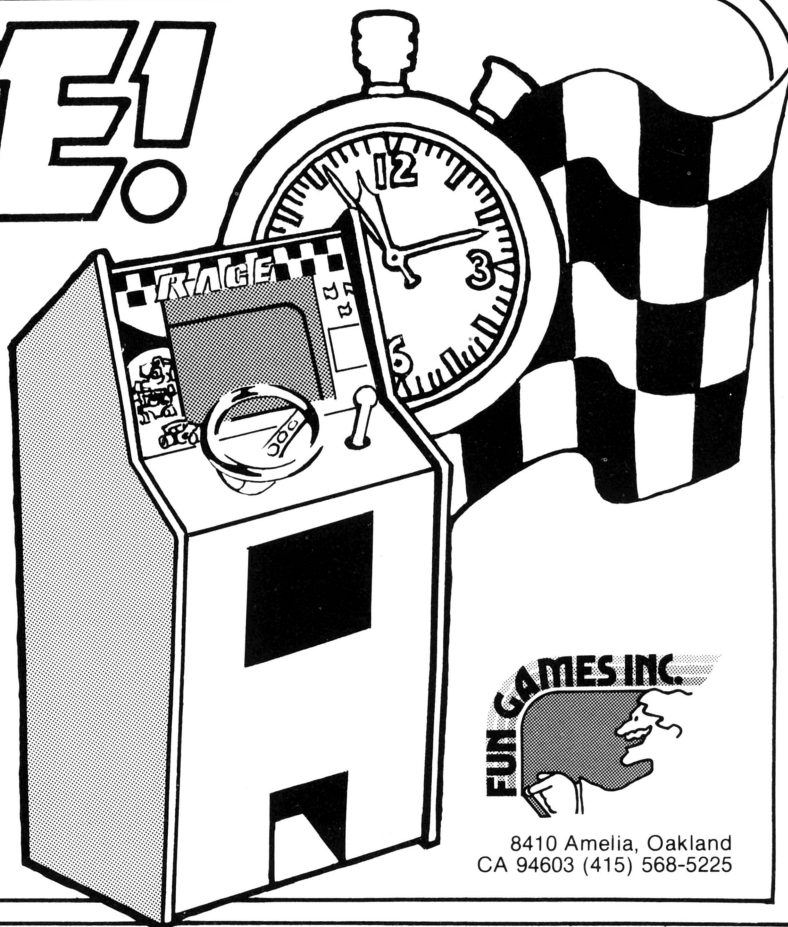
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TECHNICAL TOPICS

by Bill Arkush

The instant success of the first video games has given birth to a significant new industry overnight and thrust a complex new technology into the largely unprepared hands of amusement machine operators. The popular appeal of video games is such that no operator of coin-op devices can afford to overlook their potential. On the other hand, the myriad of circuit designs and the complexity of video game computers has increased service problems by an order of magnitude for operators without trained digital technicians.

Today's coin-op amusement industry is becoming increasingly more competitive; each location generally has several operators of electro-mechanical and electronic games all vying for essentially the same clientele. Those operators running the newest and the most stimulating games will inevitably come out ahead when all the quarters are counted. Obviously, an operator cannot ignore video games and still attempt to compete in the amusement marketplace. But while the introduction of electronic games has been a marvelous tonic for the entire industry, the undesirable side effects of this stimulant—namely service problems—have still not been adequately dealt with.

The circuit designs and overall architecture of the first video games seemed totally incomprehensible to operators long accustomed to ser-

ving their simpler electro-mechanical counterparts. However, the truth of the matter is that these first games were excellent examples of design simplicity and component minimization because at that time only relatively crude effects were enough to fascinate eager players. Today, jaded players have become bored by the myriad of variations of these first games and increasingly more dramatic game action is required to stimulate the average player who might still play a fifteen year old pin ball machine, but is not at all interested in last year's video game.

This being true, electronic games designers are incessantly on the prowl for new effects and innovative circuit designs. The simpler type of computer architecture found in the early games is clearly giving way to vastly more complex circuit designs, particularly as the semiconductor industry makes greater and greater strides in the areas of large and very large scale integration and inexpensive micro-processor chips which now make possible revolutionary new approaches to video games.

Unfortunately, this trend is having a more serious impact on operators and game service personnel each day. Technicians who familiarized themselves with the first video games and who have kept current with recent innovations are now in a unique position because as the technological gap increases, fewer and fewer game operators are able to retain the capability of servicing their own game computers. And, as circuit design evolves into evermore complex directions, the prospect of starting up a repair facility becomes less and less attractive.

However, it is not yet too late to begin learning about video games. In fact, now is probably the best time ever as certain future trends are becoming quite clear. It is still feasible for service personnel to jump into the relatively simple medium-scale random-logic designs currently being produced. But in a few years or less, as game computer architecture moves inexorably into complex large-scale micro-processor

based systems, it will become extremely difficult for the novice technician to learn to repair the new varieties of video games. The changeover from today's random-logic designs to tomorrow's micro-computer games is a quantum leap. Since this change has only just recently begun, the opportunity to become involved with electronic games is now at its ripest stage.

Successful video game troubleshooting depends on having the right test instruments, a basic knowledge of digital electronics (which is not nearly as complicated as you might have imagined), a thorough understanding of video game fundamentals and specific documentation such as schematics and test point data for the malfunctioning computer. Clearly, the most important of these ingredients is fully understanding how the various circuits of a game work for an on-the-ball technician needs very little in the way of test equipment. A firm comprehension of digital devices and circuit operation eliminates the need for expensive "hand-holding" instrumentation such as logic comparators. Believe it or not, a knowledgeable technician armed only with a voltmeter, a logic probe and a video probe (\$100 total cost) will be able to solve just about all the problems normally associated with video game computers.

To be sure, oscilloscopes and a few other more esoteric instruments



FIGURE 1: SIGNAL 64H The simplest way to achieve a video display is to couple a sync output to the video line.

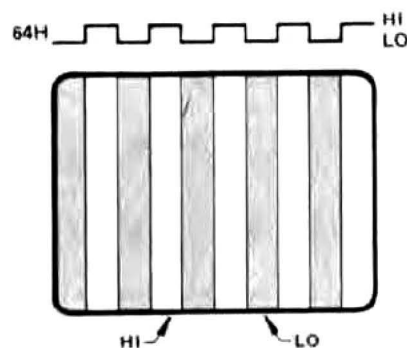


FIGURE 2: TIMING OF 64H This illustration compares the digital waveform of the signal with how the signal appears on the CRT when displayed with a video probe.

are desirable, especially for the professional technician but they are not essential. What is absolutely essential is the knowledge of why the video game computer is constructed the way it is and how the specific devices and circuits actually operate.

An excellent source for the answers to these questions is the Video Game Data Library's *Data Books and Computer Service Manuals*. Each manual is an exhaustive analysis of a particular game and contains a great amount of information available from no other source.

INTRODUCTION

The prime factor influencing the success of video games is the fact that players are fascinated by watching and being able to move glowing images around the cathode ray tube of the TV monitor. This being true, techniques for generating images are one of the most important single design considerations for successful games, so a great deal of research has been done to discover new and more efficient ways to generate and store image information.

The importance of display techniques has led to a number of interesting innovations and clever circuits, however most of the basic techniques have not been developed specifically for video games. Rather, these methods are based in other fields of digital electronics such as semiconductor memories and computer terminals where the display of characters is of the utmost importance and a great deal of research has led to many of the techniques we see today in video games. Although the basic concepts as applied to video games were not originated by game designers, their application in games has resulted in some highly original and interesting circuit designs.

Early games were, of course, the simplest and the techniques used

were the most basic. In fact, the earliest games depended very little on sophisticated display techniques; they were successful merely because of the newness of the craze. However, even these games needed some display and engineers came up with a number of simple, but interesting techniques for generating basic images such as paddles and score numerals. But as players became a little jaded, designers began to search for ways to generate more complex images and it quickly became obvious that the



FIGURE 3: A COMPLETE WINDOW To form a complete window, the area must be defined on all four sides by combining both the horizontal and vertical windows.

old methods would be too unwieldy for the greater number of more detailed shapes required.

GENERATED VS. STORED DISPLAYS

The techniques pioneered by the first games are still in use even in state-of-the-art games, however their importance has drastically decreased. These techniques all centered around the *generated display* concept where a circuit using basic components such as gates and flip-flops produced an *algorithm* which resulted in a particular shape on the CRT. To create images using this technique, sync submultiples are combined in various ways to produce geometrically oriented shapes.

While this technique was eminently successful, its limitations quickly became apparent for not only does this technique require many separate chips and a considerable amount of PCB real estate, but is also quite limited in the amount of detail which can be conveniently produced and the flexibility with which a particular shape can be effected.

So designers began to explore ways with which they could produce specific and intricate shapes they had in mind while keeping circuits simple and minimizing the total number of ICs required for a particular game theme. The only other digital technique which appeared applicable was that of *stored displays* which depend on some sort of memory to retain the information needed to generate the images. The essential difference between this technique and the generated display is that stored information is read out only when needed—it is not constantly being produced.

The first games using stored displays depended on the *diode matrix* to hold the information. Although the diode matrix cannot conveniently hold a great deal of data, it does allow the designer a good measure of flexibility insofar as he can easily plot out and execute the shape he has in mind. But more important is the fact that the diode matrix can be built with ordinary parts lying around the lab and does not require the hassle and expense of programming a real memory. In the days of the early video games, only one type of read-only memory was available and this mask-programmed ROM required a considerable investment of money to pay for the initial mask charge to enter the specific data. This was pretty scary to designers, so they avoided ROMs like the plague.

But today, there are many new varieties of ROMs available which a designer can program in his own lab. This allows him to check for mistakes and have the results he needs inexpensively and quickly. When a final shape has been decided upon, he can then produce a limited run of PROMs so prototype games can be manufactured and tested to see if the design will be successful. If the prototype results are encouraging, the manufacturer will feel justified in having a mask cut so that a large number of relatively inexpensive memories can

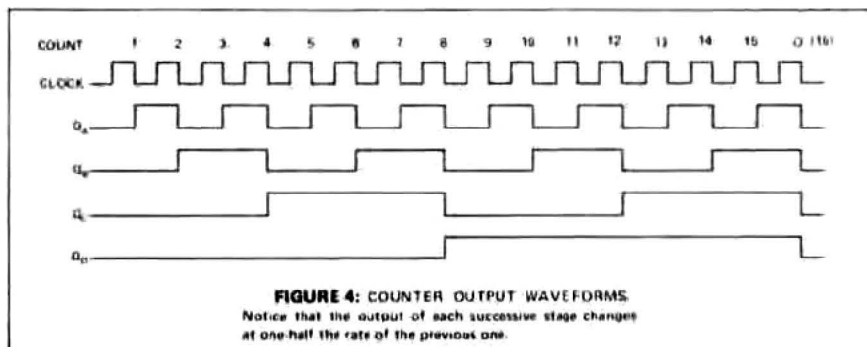


FIGURE 4: COUNTER OUTPUT WAVEFORMS Notice that the output of each successive stage changes at one-half the rate of the previous one.

be programmed with his data.

The proliferation of integrated semiconductor memories has led to an entirely new video game architecture. Many, if not most, of today's games are virtually built around the ROMs they contain and it is not unusual to find that the ROM in a game contains all the object shapes, score numerals, motion codes and other instructions and data the computer might need.

BUILDING A GENERATED DISPLAY

Sync submultiples can be gated together in an endless variety of ways to generate many types of images ranging from the very simple to more sophisticated shapes which appear quite complex. If the display requirements are relatively basic, SSI components are normally used but often more complex images can be derived using MSI devices such as counters and magnitude comparators without increasing (or maybe even decreasing) the total number of ICs required for the particular image. All generated display techniques depend heavily on the use of *windows* to specify certain areas of the CRT.

THE WINDOW CONCEPT

The term *window* is one which has been coined to describe a *selected* area of the CRT. A window is created by using the appropriate sync submultiples to define the *limits* or *boundaries* of the desired area.

Figure 1 shows how the submultiple 64H appears when displayed on the CRT with a video probe. As always, the dark areas represent the LO time periods of the signal and the light areas occur only when 64H is Hi.

The submultiples can be examined by a number of instruments. Unfortunately, the logic probe will reveal Hi, Lo and Pulsing where the only noticeable difference between outputs is a progressive decrease in symmetry further down the line. However a scope will reveal waveforms which correspond exactly to the characterizations in Figure 4.

This brings us to another instrument which is very useful in probing these kinds of circuits: *the video probe*. A video probe is nothing more than a 4.7K resistor attached to a jumper which has an IC clip on one end and a test prod on the other. The resistor can be hidden in either the prod or the clip to keep it out of the way.

The video probe is used primarily for examining video signals but it can also be used as a *sound probe*. When used to probe for noise, the clip is attached to the input of the audio amplifier and the test prod can then be used to hear any signal fast enough to produce a tone. Generally, a noise probe is used to check sound circuits, but it can also be used to "hear" sync chains working because--as you move down the chain--the tones become successively lower at each division.

But the most valuable use of the video probe is in examining *video* signals used in the development of more processed signals where the developmental signals you need to check are not visible on the monitor CRT. But, if you connect the probe clip to the negative side of the coupling capacitor found in the video summation section, the signal present at any node you touch with the prod will be injected directly into the video output line. If the examined signal is of a video nature, meaning it is neither too fast nor too slow, it will be displayed as an identifiable shape on the monitor CRT.

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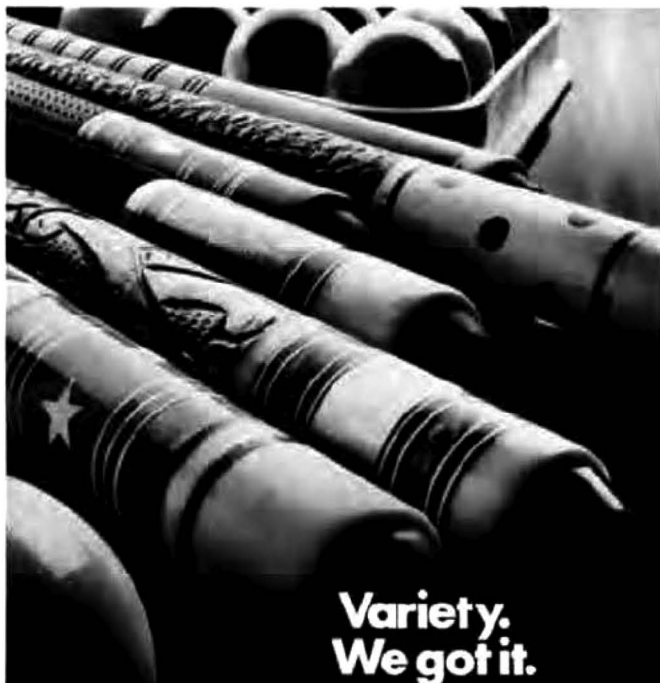


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on the move

Herbord to Northwest

Effective August 1, 1976, Bill Herbord moves to Seattle to join Ron Pepple at Northwest Sales. He hopes to complete his move from St. Paul by mid-August and will then assume the responsibilities of vice president-general manager at Northwest.

Herbord's experience in the coin machine industry goes back to his days in high school when he worked nights at Bally Mfg. Co. during World War II. After the war, when



Bill Herbord

Bally resumed manufacture of the "One-Ball" machines, he worked a short time on the assembly line. After a four-year hitch in the Navy he worked for a Chicago bottling company, then on a cigarette vending route and later for two Chicago-based coin machine distributors.

For the last 12½ years Herbord has been service manager for Automatic Products Company, a position he resigned effective July 31, 1976.

Amutech Picks Head

Amutech Ltd., Corte Madre, Cal., has announced the appointment of John Cavallaro as president. Cavallaro has been associated with the vending industry for the past six

years and is very excited about his new position.

He feels that the reception given his new computerized pachinko game at recent local MOA shows indicates an exceptionally bright future for the machine. Cavallaro claims that his is the first and only all new game without any reconditioned parts and that it is made to give the operator new profit highs with low maintenance.

The game is now being shipped to distributors around the United States. It is just one in a series of amusement and arcade games which Amutech manufactures and markets.

Atari Names Two

Atari, Inc., Los Gatos, Cal., has announced two new appointments in its coin-op products division. Carol Kantor has been named manager of the newly expanded market research department, and Terry Speizer has been named regional sales manager for the division, according to Frank Ballouz, national sales manager for the company.

Ms. Kantor's responsibilities will include the implementation of pre-market testing and evaluation, product analysis, forecasting and planning. Additionally, she will conduct programs in consumer attitude re-



Carol Kantor



Terry Speizer

search and target market analysis related to coin-operated game sales.

"We believe that increased in-depth research in all phases of our business will help us gather the input we need to continue our leadership in the manufacture of video games people will want to play," Ballouz said commenting on the appointment. "And that will be more profitable for our distributors and operators."

Ms. Kantor has held marketing research positions with the Clorox Co. and Fairchild Camera & Instrument Corp. She has a M.S. degree in Management Science from the University of Colorado and a B.B.A. in Business Statistics from the University of Texas. She resides in San Jose, Cal.

Speizer's focus will be on product sales and marketing support to Atari's distributor outlets in the western states.

"Terry's appointment is part of our continuing efforts to increase communication and offer more personalized service to our distributors and operators," Ballouz said.

Speizer's sales and marketing experience includes positions as domestic sales co-ordinator and field sales representative in the West for American Microsystems, Inc. and the Falstaff Brewing Co.

A graduate of San Jose State College with B.S. and M.B.A. degrees in marketing, Speizer is married. He lives in Monte Sereno, Cal.

new products



Buccaneer

Swashbuckler

D. Gottlieb & Co. announce the production of *Buccaneer*, a new flipper skill game.

A one-player game, *Buccaneer* features giant high scores, up to 199,000. Bright colors and an eleven number sequence provide a flashy display with lights going on and off.

The game utilizes the same basic thumper bumper layout that has been successful in other recent Gottlieb games and a spinner in the middle of a symmetrical playfield. Hitting eleven numbers in a ship's wheel located below the spinner lights two roll-overs for special scores. A spin-n-spot feature has a running yellow light in the ship's wheel to spot unlit numbers.

Back to the 30's

Atari, Inc., Los Gatos, Cal., has recently premiered an innovative new video amusement, *Cops n' Robbers*, driving and shooting action for one, two, three or four players. The new game features a reflected 23" monitor image which creates an unusual visual depth effect, at the same time allowing

for slimline styling to minimize cabinet depth.

The *Cops n' Robbers* game offers the realism and competition of a high speed car chase and gun battle between the good guys and bad guys of the era of machine guns and bootleg booze. Unique electronics allows for display of instructions, coinage and scoring on the monitor as well as the larger more animated video figures of the game.

Four durable pistol grip, trigger control mechanisms offer each player seven different firing positions for maximum range. Realistic sound effects, including gunfire, ricochets, roaring engines and exploding cars, add to the attraction capability of the game. A metal gas pedal for each player moves his car on the screen.

The object of the game is to move a car up and down the city street playfield by using the foot pedal control and while driving the car, to "shoot down" an opposing car. Two shots can be fired in rapid succession in each of the seven given positions. One point is scored for each hit.

When a car is hit, it appears disabled and slides down to the bottom of the screen and out of sight. Pressing the gas pedal makes the car reappear ready for another pass at the opponent.

A beer truck drives randomly up and down the middle lane of the street between opposing sides, a new one appearing every ten points to provide cover and challenge timing and accuracy.

Frank Ballouz, Atari national sales manager, in commenting on the new game said, "We believe the combination of driving and shooting action, more realistic, bright graphics than ever before, and the team play feature add up to an all new player experience and a high volume profit maker for operators in any location."

Operator options include switch-adjustable game time, four settings, one minute up to three minutes, and adjustable charges, 25 cents or 50 cents per player, 25 cents per game or 25 cents for two players. Usual Atari features include locking cash-box, hinged coin door and Dura-stress tested solid-state electronics.



Cops n' Robbers

Here's the Pitch

Tornado Baseball, Midway's newest two-player TV game, promises all the excitement of baseball as it is played in real life.

There are double plays, errors, strike-outs and walks, with a walk
[see next page]



Tornado Baseball

control and an automatic pitching feature to speed up the game. Tornado Baseball also features complete outfielder control for defense and a pitcher that throws fast balls, slow balls, curves, sliders and a change-up. Dual controls allow the players to alternate without changing positions.

An added plus in Tornado Baseball is that a self-testing system has been programmed to detect a defective RAM or ROM for quicker service.

The game contains a solid-state TV monitor and double coinchutes. The beautifully designed cabinet measures 26½" x 32" x 66".

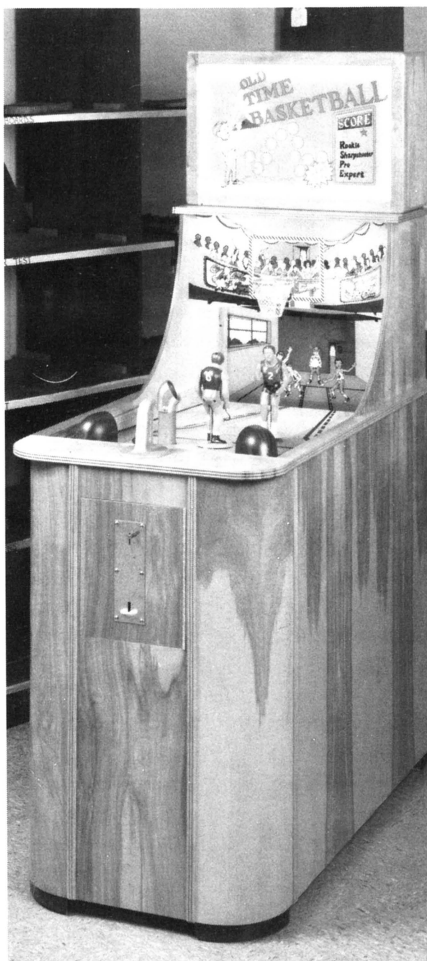
Set Shot

A first for Exidy, Inc., Old Time Basketball is the beginning of a series of electro-mechanical games all of which will be produced in the same cabinet configuration. The cabinet of this new game, Exidy's initial venture away from video, is solid birch so that each cabinet will have its own distinctive grain and beauty.

Old Time Basketball takes about 55 seconds to play. The player cannot dawdle; he must shoot quickly and accurately to score baskets. A defender moves continually back and forth in front of the shooter, raising his arms to attempt to block each shot.

A game consists of 15 shots and the player is rated, based on the number of baskets he makes, as a rookie, sharpshooter, pro or expert. The game is operator adjustable to allow for extended play of five or more shots. It is shipped with play pricing at two games for 25 cents but is also operator adjustable to either straight quarter or dime play.

Old Time Basketball possesses a solid-state sound, scoring and credit system, and the graphics of the game, particularly the birch cabinet, are designed to give it a true "old-time" flavor.



Old Time Basketball

release, the all new Flyball. This two-player game has new operator options and exciting play features. It is "like playing the real thing," players at test locations report.

Unique electronic design and programming provide more realistic animation and displays, including easy-to-follow player instructions, scoring and innings.

Flyball allows the player to bunt, to hit home runs, to steal bases, to throw curves or fast balls, to complete a double play and more. Balls and strikes are called.

An animated ballplayer running the bases attracts the future player's attention and invites him to play the game. Flashing instructions on the 23" monitor explain the rules. Play starts with flashing signs pointing to the pitcher and batter, each player set to control his man; the crowd cheers and the first pitch is on the way.

Continuous joystick control moves the pitcher's arm realistically forward. The batter swings. It's a hit! The ball goes into the playfield; the crowd screams louder as the batter runs the bases. The pitcher

directs his man to run up or down, to the left or right, chasing the ball. When he catches it, he has to tag the base runner before he reaches base to put him out. This allows for three or four seconds of action play.

If the fielder misses the ball, it's a round-tripper and the words "Home Run" flash on the screen.

Players are not required to switch positions when teams change sides after three outs. Flashing signs tell them who is pitching and who is batting.

Repeat play of Flyball increases the action and player ability: faster pitches, in-flight curve control, faster swings of the bat for harder hits and hit placement to any field are all possible.

"It all adds up to exciting, repeat-play baseball action," Frank Ballouz, Atari's national sales manager, said. "Players can even use tactics as in a real game."

New operator options include selectable game time for one or two innings of play and adjustability for 25 cents or 50 cents for one game. High volume sound effects, lighted attraction panel, and bright panel and video bezel graphics are designed to attract players of all ages in any location.



Flyball

It's a Hit

Atari, Inc. has unveiled, for July

Backgammon

Through the use of a mini-computer, the world's first automatic backgammon game is now available. The Gammonmaster, manufactured by Xedar Corp., Boulder, Colo., is capable of playing against any opponent from novice to master. Because of the random "throw of the dice," the opponent is quite capable of winning though the reliable microprocessor does provide for an unerring game.

The game board is displayed on



Gammonmaster

the surface of a cocktail table and the playing pieces are "moved" by Xedar touch switches which incorporate no moving parts. The coin

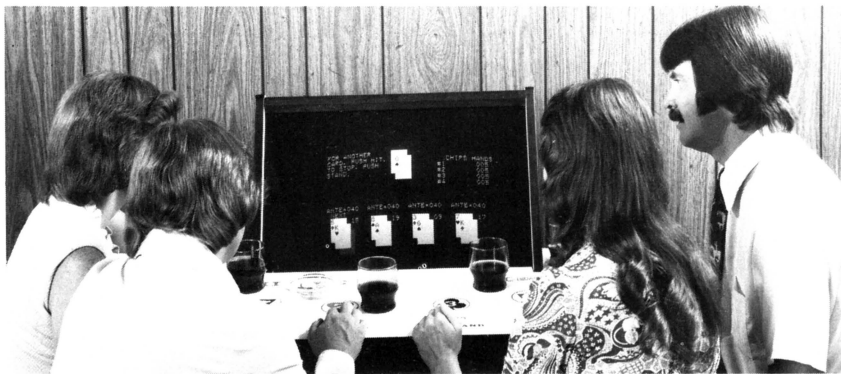
mechanism and electronics are separately enclosed. Playing time is optional, as selected by the operator.

Blackjack, Pt. II (Cocktails for Four)

Ramtek Corp. is unveiling a unique new cocktail table design for its blackjack video game, Hit Me. In Hit Me, one to four players can compete with each other or against the house. A game consists of a maximum of five hands or until the players lose their assigned 40 chips. [See June '76 New Products section for a more complete description of Hit Me.--Ed.]

The new four-player cocktail table is upright in design so that nothing--drinks, napkins, etc.--can obscure the screen. And the unit, as opposed to the conventional cocktail table, can be placed against a wall.

The table top is 30" from the floor. Like the full-scale version of the game, the cocktail table Hit Me is equipped with a microprocessor.



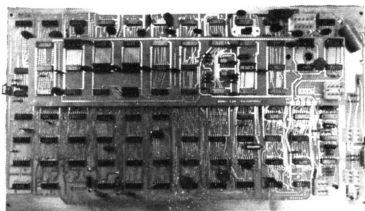
Hit Me Cocktail Table

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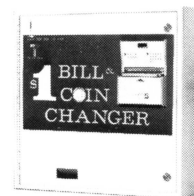
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boards for every game you operate, so you must have progressed to a level of having people working for you that can repair the machines for you.

LESLIE: Again we have to talk about the Cherry Group. Our knowledge of operating comes from Sweden where our operation is extremely sophisticated. There has never arisen a problem that we couldn't cope with in Sweden--and now in England. We have excellent engineers in England who can fix anything that any operator carries in video. In fact, we improve games ourselves. We modify the Atari games with our own ideas. We believe Atari makes a great product, but there is nothing ever been produced that can't be improved upon.

PLAY METER: Where do these technical people come from?

LESLIE: Both in Sweden and in England, there is no lack of technical people. We are not talking about atomic technology, after all; we're talking about solid-state technology. We find it is not difficult to find people who can read schematics and who know the whys and wherefores of integrated circuitry. And really that's all we need.

A small operator in England though suffers with the same problems as a small operator in America probably does. But we do try to help smaller operators. Because we sell to them, we have an obligation to the smaller operator. Where there's a man who has just bought his first video game, I would give him all the help I could, technical or otherwise.

PLAY METER: How much down time do you experience with your games?

LESLIE: In Sweden, we like to think that we have a one-hour service. In England at the moment we are still running on twelve-hour service. But our goal in England would certainly be a one-hour service as well.

PLAY METER: Has the reliability of the games improved over the years?

LESLIE: Here we're talking about Atari. I think everybody accepts the fact that Atari has improved their equipment. They obviously have better factory testing equipment, obviously have better everything at Atari now: they've become bigger and richer. They can do a better job now. They are young, enthusiastic people. And I think they want to give a good machine for the money they get.

I really believe that. They are called Atari Innovative Leisure, and they are full of innovations; they're always improving. A perfect example of that is that every Atari game comes with a full service manual and parts manual.

PLAY METER: Does this include schematics?

LESLIE: Everything. Absolutely everything.

PLAY METER: For a while, nobody wanted to part with their schematics.

LESLIE: Right, but that was the old days. That situation has changed. Nowadays, when we sell a new Atari game, you open up the machine and there is a full manual, giving a parts breakdown, so that when you want to order a part, you can tell us exactly what part you need. There are schematics so that you can trace the problem when you've got something gone wrong. There is a trouble-shooting

guide, a guide showing how to set the game up, how to make operator options work. There are all sorts of things: a full manual. So, in general, I would say the reliability of the games is far, far better; the technology is far, far better; the testing at the factory is better also. So really we have far less down time than we ever did before.

PLAY METER: It's good to hear that. What is your commission structure?

LESLIE: In England, we hold out as much as we can for 60 per cent of the take for ourselves and 40 per cent for the site owner.

PLAY METER: How many video games operators are there? Do you have any idea?

LESLIE: It depends on what you classify as a video game operator. There is nobody else like us that operates *only* video, and there are probably no more than a dozen companies operating video to any great extent in the country. But if you want to take the operators who have the odd video game here or there, you would probably run into two or three hundred operators and there is a great deal of video operation in our arcades, which is a seaside business mainly. Every arcade has video.

PLAY METER: Do you think there is a future in multiple player games?

LESLIE: Yes, absolutely. We're convinced. We haven't had a large quantity in the country--they've only been here since mid-June--so we haven't as yet had the opportunity to analyze the take or get any real feedback on the Indy 8, but we have enormous confidence in it. We also think the the Indy 4 is going to be a fabulous game, perhaps more so because it's cheaper and the size is better for many of our locations.

PLAY METER: What about this new kiosk game?

LESLIE: I have nothing but confidence in it. We feel that that is the future of video because with the kiosk, you are going to have a situation of only once buying the cabinet and being able to rotate the games within the cabinet. This will bring the costs of the games down to a much more acceptable level. Also with the kiosk, you are going to be able to make a much more presentable show than perhaps you can with the different shapes and sizes of video games.

PLAY METER: What is the general opinion of video games in the United Kingdom now? Has the bitterness faded away?

LESLIE: No, it's still a very hard sell. The arcades have accepted the video games to a great extent. But many of the operators are still very anti-video.

PLAY METER: Do you think this situation will ever change?

LESLIE: I think we are overcoming the problem. The games are becoming more accepted. We do a lot of publicity within the trade. We advertise ourselves as being purely and simply video operators. Consequently, we say, that we have confidence in it so that you should have confidence in it. We also say that if anybody can help you with your video problems, we can because we know all there is to know about video. So, in a few years, I suspect, there will be a considerably larger proportion of

(continued on page 45)

Bull Sheet

Tell us about us.

Sponges can't respond, but people can. If you want to comment on an article in this issue of *Play Meter*, here is the opportunity. If you want to address a question to one of our authors or if you want more information on a topic we've covered, it's as simple as tearing out this card and mailing it. Give us a piece of your mind in the space below. We're good listeners.

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☐\$100-200 ☐\$500-1,000
☐\$200-300 ☐\$1,000-2,000
8 ☐more than \$2,000

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3. If you have to pay a city or state licensing fee for your machines, what does that license cost you a year?

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City _____

4. How large an operation do you have?

- ☐less than 30 pieces ☐30-50 pieces
☐50-100 pieces ☐more than 100

5. Do you operate or distribute:

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(continued from page 22)

first be a turn-off to some players only because there is so much to aim for. But if one can get into the game, he'll find it to be an above average model. The top and the middle contain most of the action, with the drop targets being a difficult shot to make without some help from the top left thumper bumper.

The graphics again move toward the realistic with a surfing scene finished in nice soft blues and greens. And as is the case with other games coming out, and reflecting what seems to be the old standby Playboy philosophy--the girl is "healthy." Or to put it another way (with no apparent paradox in mind): boobs are in for '76.

Rating: ###½

Playmatic's FIESTA (one-player FANDANGO)

From across the ocean comes this four-player game, the follow-up to Fairy and Fantasy. Based in Barcelona, Spain, Playmatic has made some great strides on these shores. Their games bring us a taste of what Europe has been familiar with, in terms of color and graphics specifically. It is a fresh touch and one welcomed by those who view the games from something more than the playing characteristics. With their distribution being rapidly expanded through the efforts of Barry Feinblatt, Playmatic offers games that play somewhat faster than our domestic models. A slight playfield slope is still *de rigueur*, which helps to speed up play while it challenges the player.

With *Fiesta* we can get a glimmer of what the Spanish mind is thinking. There is inherent action in a playfield I found particularly vertical in structure. What I mean by this is that the action is basically up and down. For the most part many American games tend to utilize the horizontal plane a bit more, in terms of lateral action off of long kickers or even widely spaced bumpers. In this instance Playmatic chose to flip flop a very popular game, Gottlieb's Sheriff. With slight modifications, such as the top right kick-out hole, the play principle is the same, offering some good skill shots. One of the major areas of play, called "going to the races" by a player in Illinois I interviewed, are

the side lanes where a subtle nudge is the order of the day.

The playfield's right side offers an offsetting target arrangement, which played a little soft on the game I tried. In fact, one thing I might change, or at least try to alter is the target construction which had a slightly padded appearance. Playmatic may do better going back to the plastic type target for a swifter rebound and greater ball acceleration after impact. As for the top, we find one bonus lane and a kick-out hole (previously mentioned). The thumper bumpers supply some good action, although in this case it emphasizes the top half of the game. Concerning the bottom, which I found slightly sluggish off the flippers, the play was smooth and direct.

The game has some good points and others that can be improved upon, but by design it is anything but foreign and should give American players a good run for the money. Also one final note on play action--Playmatic has instituted their six digit high scoring drums, so players will have to be pretty adept to "turn" this game.

Graphics on this particular game are impressive in their Spanish influence. Bold and definite lines are used with high tone colors that many Spanish manufacturers use. The flamenco dancer being watched by locals and tourists alike is both pleasing to the eye and highly distinctive.

Rating: ##½

Allied Leisure's BOOGIE (two-player DYN O' MITE)

Here we have the four player version of what has become known as a "hybrid solid-state pingame." Following up Dyn O' Mite, which was first featured nationally in Gentlemen's Quaterly by yours truly, is *Boogie*. This Allied Leisure pinball entry is a far cry from the days of 'shakerball' which materialized back in the mid 60's. With *Boogie* we have a pinball machine from all its external features, except for the digital scoring and line'em up feature.

Play action is symmetrically designed with a good array of eight top targets. The top thumper bumper offers some smooth rebounding off kickers and also into the three high lanes. Two reasonably innovative departures on this

game are the center drop targets which, as in the Gottlieb game Crescendo, can only be knocked down from the front. But also tied into this are the side lanes which can raise an already hit target. In addition the Italian bottom features open gates which can save balls destined for the out-hole. The flippers are long for an increased hitting angle and afford an excellent degree of player flexibility in saving the ball and also in getting back up to the targets.

Digital scoring and the sound gives me some problem, but then I have been called a traditionalist by a few people, so this is just a personal gripe. On location I have seen a great many games pulling in just as much action as their electro-mechanical cousins, although I have run across an inordinant amount of down games. But this is a noble venture into what the future of the industry holds, so total judgement must wait for more tangible evidence. The important thing is that the game is getting its fair share of playing time. It offers a fairly standard playfield design which doesn't depart too far from the norm, and for an initial effort it does well.

Graphically I have some strong reservations. Color coordination is not too bad, but the back glass artwork is totally incredible, going against most of the artistic influences happening in the real world. But it is kind of funky and since the game is mechanically a dramatic departure from what has gone in the past, maybe the graphics serve a proper purpose, but I tend to think that if J.J. Walker were the influence behind the game, his image might appear stronger and more forceful to add to any promotion possibilities.

On the whole I eagerly await the forthcoming Ian brainchilds and know instinctively that he has many things up his sleeve by which to wow us.

Rating: ##

So that's this month's installment of Merry Pinball, Merry Pinball. All give some good possibilities for the summertime players who should be ready for the great pre- MOA arrivals that will be hitting the streets by early fall. And as I closed last month: take care and keep those machines running smoothly and efficiently. Enjoy the quarters.

Survey '76

(continued from page 20)

When deciding to buy a new game, 38 per cent of our respondents found distributor recommendation to be the most important factor, 26 per cent said they relied most on word of mouth and 16 per cent said graphics. Of those responding to our poll, 21 per cent said they used some form of location testing.

These are the dry-as-dust facts about Mr. Ave. Op and his operation, but he's human in a way. At least the operators that responded to the *Play Meter* poll are human. They have complaints about the industry and reasons why they stay in it. They are bugged most by the current commission structure and by the bane of everybody in the world today, rising costs. Service is also a major problem, the service demands made upon them by their locations, getting good servicemen, the late night calls, and particularly the down time while waiting for parts.

They complain about their locations, about the owners "not keeping the amusement areas neat and clean," and in more than one case about those owners' "lack of business sense." They complain about the manufacturers. Answers to our question, "What's wrong or right with operator-manufacturer relations?" indicated that many operators feel that they have no relations with manufacturers. More than one listed "lack of communications" as a wrong, and one complained that "if an operator buys a bad game he is stuck with it; the manufacturer will not try to help him.

Operators complain about their distributors, about their selling directly to locations and selling bootlegged equipment then being unable to supply parts. But most answering our poll emphasized that they had good relations with their distributors.

Despite the complaints, our operators enjoy the challenge of the business, the mobility and constant variety of activity. "The work is stimulating," one operator wrote, "always different, never a grind."

They enjoy being their own bosses, they enjoy giving fun to others and they enjoy the people they have met and are meeting in the industry.

One laconic operator summed up the gripes and the cheers best. Asked, "What bugs you most about the operating business?" he answered, "Lack of." Asked "What do you enjoy most about the operating business?" he answered, "Counting the money."

Consumer Electronics

(continued from page 21)

the video game business. Sy Lipper of APF also distinguishes TV games from other toys because they stay in the electronics category. He adds that they will increasingly become a learning device with changes being made as fast as new technology develops. He sees such high-skill video games as chess and backgammon available in the near future.

A major concern among potential investors in the industry is the possibility of price erosion, similar to that which occurred with electronic calculators and digital watches. All panelists agreed that within the next 18 to 24 months a home video unit will be available for as low as \$29.95.

However, none of the panelists considered the price drop an indication of erosion. According to Lipper, a low price category of simple games, with limited game features, will develop because the technological investment is limited. Once the software investment is covered, a simple quality game can be produced for less than initial costs would permit, and the manufacturers, in his opinion have a responsibility to the consumer market to reduce the selling price as this

occurs.

Bushnell pointed out that the price erosion which took place with calculators and digital watches cannot really be compared to TV video games because of inherent differences in the products. Unlike calculators and watches, which do not have that many differentials, according to Bushnell, each TV game has its own concept. The research and software development invested to create these concepts raises the price of a game. Therefore, TV game manufacturers will constantly require an investment that will keep the selling price up. Helms pointed out that for the first time this year, consumers will be in a position to measure between good and poor games, which may limit a proliferation of games on the market.

Also hindering to the proliferation of TV video games are the very stringent controls being implemented by Federal Communications Commission. Radio frequency interference on television receivers and the emission of radiation from the video games has caused the FCC to place costly quality requirements on all video game products. In fact, only nine of the manufacturers displaying video games at the shows have received FCC approval of their products. Those who had not were legally required to display signs informing the public of this. While costly to the manufacturer, all panel members agreed that the FCC regulations are positive. Eventually an FCC ruling may demand that video games be built directly into the television, but according to Helms this will probably not happen for years.

During the week of the Chicago show, it was announced that an out of court settlement had been made between Magnavox and Atari regarding the patent on who originally created the video game for home use. Asked what this settlement would mean to the consumer, Bushnell indicated that neither side was happy with the settlement, so it must be fair. According to Bushnell, licensing should be shared by the industry and patents are essential to protect the manufacturer's investment in engineering and R & D technology. Helms of Magnavox agreed with Bushnell regarding the importance of this protection and had little more to add.

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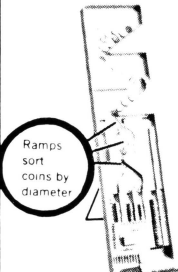
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- Old Arcade Games (pre 1940)
- Old Pinballs (Pre 1950)

- Literature, Brochures or Operating Manuals on same
- Call person to person **COLLECT** to E.J. Cummings (605)336-3398

Or write to me at 300 South
Lewis, Sioux Falls. S.D. 57103.

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operators operating video if the games continue to be appealing and innovative.

PLAY METER: What advice would you give someone about to enter the video game business?

LESLIE: Try to stick to one manufacturer if possible so that you can carry the spares yourself. Try to have as little down time as possible, which is

only natural, by running your own servicing. If you're operating in a small way, never have any surplus of one type of game you can't rotate. It's better to have two each of five different games than ten of one game. You must also watch the take very closely, monitor your income, make sure that the minute a machine begins to drop off you take it out of that location and give the location a new game.



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The 463 is the all new compact version of our famous 464. It takes up less space because we've designed the 463 to handle 100 selections rather than 160. And by cutting down on the number of selections, we were able to cut down the cabinet size. Making the Rock-Ola 463 the ideal jukebox for all those smaller locations.

But as important as what we changed is what we kept the same. And that includes all the quality, dependability, esthetics and mechanical innovations that have made Rock-Ola the industry's leader.

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designed to take thousands of continuous trouble-free plays. You'll find an amplifier that gives a full 100 watt output. And you'll discover 100% solid-state circuitry.

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